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TRANSACTIONS

OF THE

INDIANA STATE MEDICAL SOCIETY.

1885.

THIRTY-FIFTH ANNUAL SESSION,

INDIANAPOLIS, MAY 12, 13 AND 14, 1885.

INDIANAPOLIS:
WM. B. BURFORD, LITHOGRAPHER, PRINTER, STATIONER AND BINDER.
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PRESIDENT'S ADDRESS.

HAVE WE REALLY ADVANCED IN KNOWLEDGE AND IMPROVED IN PRACTICE?

BY J. H. WOODBURN, M. D., INDIANAPOLIS, INDIANA.

The occupation of a general practitioner of the art of healing, whose duties are continuous, and necessarily routine, is not conducive to original research in any of the fields of science; familiarity with which is, nevertheless, essential to the education of an accomplished physician.

With our modern facilities for printing and distributing knowledge, and the enterprise of modern journalism, everything is known as soon as thought, and much material is contributed to the rapidly increasing volume of medical literature that does not add to the real value of our large stock of knowledge. A contribution of new matter will not, therefore, be expected of me on this occasion; and I shall content myself with an unambitious expression of a few such thoughts as are naturally suggested by the experience and memories of forty years devoted to the practice of medicine in Indiana.

Ambition and expectation pertain to youth. To review the past and sit in judgment upon results, are among the privileges of age.

When the energy and strength of a man who has endeavored to keep step in the grand march of civilization across the ages begin to fail, and culminating capabilities seek repose rather

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than activity—even while still striving to maintain position along side of younger and more vigorous comrades, who may have joined the ranks since he became a veteran—questions will arise respecting the distance traversed, the object of the march, who have been or are to be benefited thereby, and many other things of like import, indicative of weariness, but not always unprofitable to consider.

The questions that have been suggested to me for consideration to-day are:

Is it true that great advances have been made in the theories and practices of medicine within the professional life-time of men still engaged in the art of healing?

Is our knowledge of medicine more voluminous and accurate, and our application more intelligent and successful than were the knowledge and practice of the physicians of the generation that preceded us?

Is the profession of medicine really beneficent or essential to the welfare of mankind, because of our knowledge of disease and the effects of medicines, or only because of the ignorance and superstition of the people, which we share to some extent with them?

These are not idle questions, nor are they so easily answered as to be devoid of interest. That great changes have taken place in the practice of medicine within the observation of the older members of this society, and that the literature, if not the knowledge, of the profession has been greatly augmented, no one will pretend to deny.

No one man, if he had nothing else to do, could now read all of the medical books issued by the medical publishers of this country from year to year, to say nothing of the medical journals that, under the fructifying influence of advertising patronage, as "sample copies" alone, encumber our office tables.

Medical schools have greatly multiplied, and flourished; and sects in medicine, based upon pretensions of newly discovered principles in nature, or protests against old abuses in practice, have sprung into existence within the period mentioned—some of them to acquire more than a transient foot-hold and importance.

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Fifty years ago the best equipped medical schools boasted of but six chairs, two of which were sometimes well filled by one and the same professor; and the Western practitioner who was possessed of a dozen medical volumes had reason to congratulate himself on the fullness of his library. Philadelphia was the Mecca toward which every devotee in the profession reverently turned his face and bowed.

Wister's Anatomy, Dunglinson's Physiology, Eberlie's Practice, Dorsey's Surgery, Dewees' Midwifery, and Henry's or Silliman's Chemistry, were the standard American text-books, and represented fairly the sum of medical knowledge then extant. The medical schools of to-day can not get along with less than ten or twelve professors of distinct branches of medical knowledge, and a long line of so-called lecturers to supplement their course of didactic instruction. Dunglinson, Dewees and Eberlie are obsolete, and only remembered by the older members of the profession. The practice of medicine, because of the inability of any one man to master all of the knowledge, or pretensions of knowledge, pertaining to the art, has naturally been tending to crystalization into distinctive specialties, intimately related, yet each presenting well-defined characteristics. Whenever practicable, the "family physician" now sends all cases of serious or obscure diseases of the eye to a reputable occulist, all surgicial diseases of women to the gynecologist, and positively declines to pull a tooth if within the reach of a doctor of dental surgery. If patients become insane, they are hustled off to an asylum for special treatment. Diseases of the brain and nerves are regarded as worthy of separate study, and have given rise to voluminous special literature. The nose, alone, furnishes an ample field for the practice of full-grown "Doctors of Medicine." We have members of the profession, also, who make pretensions of special qualifications for, and skill in, the treatment of "fits." Whether these are lineal descendants of the old doctor, celebrated in the annals of "Pipe Creek township," who endeavored, as was said, to convert other disorders of his patients into "fits," because of his ability and skill in the treatment, I am not prepared to state authoritatively.

Fifty years ago, by two years' study, including attendance

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upon two full courses of lectures of sixteen weeks each, an ordinarily capable medical student could acquire all that was to be known of medicine, and took rank at once as an educated physician. Now, while there are many medical colleges that will confer the degree of "Doctor" upon any second-course student who may apply, with the necessary graduation fee, two years' study and two courses of lectures serve only as an introduction to the higher branches of medical knowledge and foundation-laying for a thorough medical education.

This great change in the volume of medical knowledge, attended by a corresponding multiplication of methods and appliances for the treatment of diseases, compelling a division of labor among practitioners, is not more marked than are the changes that have taken place in the details of practice, as a result of new or modified views of disease itself, and the relation of medicine to physiological and pathological processes.

It has ever been a characteristic of human ignorance to ascribe all otherwise inexplicable phenomena to the intelligence and power of hypothetical beings, good or evil, or to regard them, at least, as the sensuous manifestations of invisible, impalpable, though real entities. For centuries nearly all diseases, as well as other natural phenomena of a disagreeable character, were commonly attributed to the machinations of the devil, accomplished by the employment of imps and witches. The practice of medicine was not much more than a species of jugglery, or black art, by which one kind of magic was counteracted by another.

Survivals from such theories of disease and such practices, were observable in the profession fifty years ago. We spoke of, if we did not think of, diseases then as so many hostile entities invading the human body from without, and fixing upon this or that organ as a matter of choice or pleasure. People were "seized" or "attacked" by disease. Diseases, also, were sometimes fickle, suddenly abandoning one organ and seizing upon another.

The practice of medicine was a sort of antagonistic invasion of the body by drugs, or otherwise, expelling the disease. With this object in view, we resorted to blood-letting, vomiting,

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purging and blistering, the body supposed to be invaded, or "seized," or "attacked." After the disease was "driven out," or "slaughtered" within, efforts were made to restore the strength of the unfortunate patient by stimulants and tonics, and opium was administered, in some instances, to enable the invalid to endure the attendant suffering of treatment, as well as of disease.

The lancet, calomel and jalap, antimony and ipecac, and cantharides, were the sheet-anchors and bowers of the regular practitioner. Opium and "barks" were his spare anchors. All manifestations of disease were treated symptomatically upon the same general principles.

For example: Fever was fever, no matter how instigated; no matter what adjective qualified the noun—typhus, billious, spotted, intermittent, continued, phrenitic, remittent, gastric, or pneumonic—it was treated as pyrexia, and according to its stages of development, as variations of a single phenomenon. The first stage was combatted with an emetic and warm drinks. The second stage, indicated by general elevation of temperature and vascular excitement, was met by blood-letting, purgation and abstention from food and cold drinks. Vesication was resorted to for the purpose of "transferring the irritation of the whole system to a particular part," or to drive the enemy from a dangerous locality to a less dangerous position. The third stage called for diffusible stimulants; broken doses of calomel, with opium, to effect ptyalism, if possible (salivation being regarded as the white flag of surrender on the part of the foe), to be followed (if the patient survived), by tonic bitters, and food cautiously supplied. It was sometimes the case, that the first stage of the fever was omitted, or merged into the second, or, in other words, that the first indications of an "attack" were severe pain in the head or back, delirium or convulsions, with cold extremities, etc. In such cases blood-letting was the first thing thought of. If the veins of the arm failed to bleed satisfactorily the jugular was opened, or the temporal artery was cut in great emergencies.

If a man fell apoplectic, he was bled. If he was insensible from concussion of the brain or intoxication, he was bled. If

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he had vertigo, he was bled. If he had inflammatory disease of any kind, or of any organ, he was bled, purged with calomel, and blistered. Nearly all women were bled once, or more than once, during every period of gestation. A great many women were bled during labor to facilitate parturition. Eclampsia and puerperal fever were treated "*secundem artem*," with the lancet. Small, but frequently repeated, bleedings were resorted to for the mitigation of (no one thought of curing) phthisis. The insane were bled copiously and often. Neither old age nor infancy escaped entirely from this all-pervading practice.

How is it now?

Bleeding is obsolete. Emetics are rarely administered in the treatment of ordinary diseases. Active purgation is carefully avoided in most cases. To salivate a patient, under any circumstances, is disreputable. Nutritious food is regarded as essential in nearly all stages of nearly all diseases. Cold or cool water is admissible in all cases, and used freely, internally and externally, in the treatment of fevers. Vesicants are seldom, if ever, applied for the mitigation of general symptoms. Remedies not known to the profession fifty years ago are now regarded with the greatest favor. Aconite and veratrum, quinine, and strychnine, and belladonna, the bromides and chloral are now favorite remedies in the treatment of ordinary diseases. Of all the old remedies familiar to the older members of this society, opium, ipecac, iodine, castor oil and cinchona barks, have alone maintained their places through all vicissitudes.

All medicines, in the hands of the most capable and learned practitioners, are used much more sparingly than they were.

Disease is no longer regarded or treated as an entity, but as a manifestation of conditions; as a natural phenomenon resulting from natural processes, however painful or destructive.

In short, medicine, in the more comprehensive sense of the term, has undergone a most remarkable change—a complete metamorphosis—the character and significance of which, to the student of to-day, is almost incomprehensible.

But the questions ever pressing for solution are: Have we really advanced in knowledge, and improved in practice?

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Is it possible that our fathers in medicine, and we older men, in our younger days, had a reasonable degree of success in the treatment of disease with the remedies then in common use? Yet, if it be true that the present doctrines and practices are, as claimed, by far superior to the old, how can we evade the conclusion that the treatment is certainly more successful?

There are two elements of human nature that sometimes seem to antagonize, and thus embarrass us in our endeavors to correctly estimate the relative merits of things past and present.

One of these elements, constituting a noble characteristic of mankind, elevating the race and distinguishing individuals, is veneration for age.

It has been, and still is, the habit of most persons to look backward, up the stream of time, for wisdom, and to regard all things present, or modern, as indicative of degeneracy, corruption, and weakness. This is the conservative element of our natures, and saves us, undoubtedly, from many follies.

The other element, equally characteristic, is that of self-esteem—the mainspring of ambition, and of all self-asserting, forward motion. This is the innovative element which leads us onward, opens to our perceptions new views, from higher points of observation, around which the horizon of our vision is conspicuously widened.

How can we reconcile these conflicting influences? By an appeal to facts and reason.

The habit, long indulged, of accounting for such a revolution in the practice of medicine without offense to the memory of our fathers or accusation of ourselves, by assuming a corresponding change in the nature of diseases, or of the structures of the human body, is not in accordance with facts, and must necessarily be abandoned.

That there has been no change in the character of diseases, may be known from the facts that disease is a phenomenon, the characteristics of which are determined by the cause that instigates it, and the conditions of organs from which the phenomenon proceeds. The same cause will always produce the same disease, other circumstances being similar. That any considerable change has taken place in the general structures of

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the human body is not to be believed. If there has been any, it has been for the better, not for the worse. Hypocrates, Galen, Cullen, Sydenham, Armstrong, Rush, in their days, described the phenomena of various diseased conditions common to our time as accurately as have any modern observers, and precisely as we see them every day. Had diseases changed a new description would be necessary.

Facts show, also, that longevity of the civilized races has increased, and the ratio of mortality from disease has greatly diminished within the present century.

It is true that other factors than the improvement in medical practice enter into this problem of longevity and mortality. Medicine, in fact, has only been keeping step with the advancing columns of civilization. Men, as a rule, are as strong, as energetic and as enduring now as they were a hundred years ago. They resist the hardships and exposures of army life, and the shocks of battle-wounds and surgery (including loss of blood), as well as did their ancestors, immediate or remote. They are better fed, better clothed, and better housed than their fathers were. There has been, in fact, a general increase of human capability, and consequent or concomitant increase of knowledge in every department of human affairs.

What changes may have taken place in medicine are justly referable to this general advance of the people.

What though the profession has emerged from the old arena in which, for so many centuries, it fought "gorgons and chimeras" with the fidelity and heroism of knights-errant of the age of chivalry, to command now, an army of well organized forces, in aggressive and defensive warfare with the unmasked agencies that forever threaten the destruction of the race? While we may proudly congratulate ourselves because of the fact we need not, we can not, justly reproach our predecessors for having failed to reach the eminence to which we have been exalted.

Let us be thankful, then, that we are what we are; but let us, at the same time, remember that we owe to our fathers a debt of gratitude, and hold them still in reverence, inasmuch as it is an axiom of modern science that "Whatever is, is an inevitable sequence of what was before it."

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DISCUSSION.

Dr. Moffett—Mr. President, I hoped that some of the older members of this society might take this occasion to call the attention of the present generation of medical men to the many things of the past that have been alluded to. I remember well the ideas of my teachers forty years ago. The question which is presented here in this paper is *apropos* at all times for each and every medical gentleman, especially when he has attained to years in the practice of medicine, to ascertain the fact, if he can, whether we are entitled to say that medicine has made advancement. I fear sometimes that young men that I meet with just average skill, feel that they are living in a forward time, and in receiving medical instruction that they are so much in advance of even the generation of their preceptors, that those who have grown gray in the study of medicine, in their boyhood days, are greatly behind the times. I say that I have discovered that feeling prevalent among young men that have entered the profession within the last ten or fifteen years, and I believe it is fit to make this remark right here, having had a little experience in attempting to teach medicine, that our fathers were nearer correct in the number of studies that should be presented to the young man while he is a mere novice in the science than they are to-day. In my boyhood days six subjects in the most distinguished school west of the Alleghany Mountains were all that were presented for the young man's consideration, while now, ten to fifteen, or even twenty, are presented to the young men in the same period of time.

Dr. Lomax—Mr. President, I will make a few remarks in reference to the changes medicine has undergone since I gave it my attention. When I first began the study of medicine two ideas were waging war with each other in regard to diseases. One idea was that all diseases commenced in the blood, and the other that all diseases originated in the nervous system. The believers in these two ideas waged a furious war on the subject of their contrary opinions. One eminent French medical man took the ground that all diseases were inflammatory and had

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their origin in the mucous membrane of the alimentary canal. Another set of medical men had the idea that every disease commenced in the brain, and even taught that cholera was a disease of the brain, and some of those opinions were supported with an ability that some of us could not struggle with now.

Dr. Wishard—Mr. Chairman, this seems to be an old settler's day. I have been in the practice forty-five years. There is much of the past to be censured and much of the present to be approved, and yet much of the present to be censured. To take this subject in a sensible way, we must go back to our father's time and day, and know the habits of the patients they treated. We are a different generation of people, the same people in many respects, but a different generation, because their habits were different, and I am not so certain but what the man who would go into the field and practice medicine now with the same remedies—with the remedies we use now—and with the same diseases that existed forty or fifty years ago, would make just about the same failure as the man would who used to reap wheat with the sickle, if he should now take a reaping machine into the field full of stumps. I know that blood-letting and such things are not used to so great an extent, but I am not so certain that blood-letting is a lost art. I still have it in my mind that now and then the patient would be better for losing a little blood.

Dr. Stemen—Mr. Chairman, I believe that few men I know of in the present day give us a better description of the pathological conditions than did the pathologists of our fathers. As we have heard this evening, certainly there has been improvement in regard to therapeutics, and it is very interesting to us to hear our fathers give their experience and the treatment that they employed in those early days. I heard a very learned medical professor at one time addressing a class of students, say to them as they were about leaving college, that they were a good deal like a bumble bee, the largest just after they were hatched, and that they would grow smaller in their own estimation as they grew older. I think there is a great deal of truth in that. There has been great advancement made in regard to medicine, but at this time medical students are running after

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bugs and insects and germs, and leaving the more solid and important subject of investigation in regard to pathological conditions, as we have heard this evening. The fundamental principles of anatomy, physiology, chemistry and pathology are in danger of being neglected, for those finer theories which are, of course, not to be disregarded; but they are not the foundation upon which to build. I think, however, the paper and remarks we have had this evening are important and may be profitable to us.

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THE PANCREAS.

(*πάγκρεας, All Flesh.*)

BY D. C. BRYAN, INDIANAPOLIS.

"It is always of advantage," the illustrious Darwin observes, "to perceive clearly the measure of our ignorance." The pancreas is a gland that, until the last century, was comparatively in obscurity, and about the functions of which little was known. The venerable "Father of Medicine," Hippocrates, no where in his works mentions the pancreas. Vesalius, in 1500, "simply regarded it as a cushion the use of which was to keep the stomach, when filled, from being pressed and injured by the vertebra." Bartholin, in 1600, "regarded it as the excretory duct of the spleen." "The pancreas is of early formation, being far advanced in the second month of fœtal life. In the development of the liver and pancreas, it seems to be admitted that the epithelial lining of the duct passages is furnished by the hypoblast and the vessels by the mesoblast." Delafield says "that the pancreas is so firmly bound down that its position is not often changed, but when change does occur, it is "caused by tight lacing, displaced by aneurism, or contained in umbilical and diaphragmatic hernia." Atrophy of the pancreas, according to the same writer, is "produced by three causes: 1st. Pressure of tumors, aneurisms, etc. 2d. By obstruction of its duct. 3d. As an idiopathic process." Delafield also says, "That extreme degrees of atrophy of the pancreas is sometimes found in diabetes, and has been known to reach the degree that it was no longer visible to the 'naked

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eye.'" Also, according to Rokitanski, "that the pancreas may be entirely absent in congenital umbilical hernia." Riolanus found the gland, in one instance, as large as the liver. Brunner "removed almost the whole pancreas from dogs, and tied and cut away portions of the duct, but the animals lived on apparently as well as ever." According to Gray, "the pancreas is a compound racemose gland, analogous in its structure to the salivary glands." Wistar says "it is of a dull, white color, with a touch of red." Gray describes it "as transversely oblong, flattened from before backwards, and some what resembling in shape the 'tongue of a dog.' Its right extremity being broad, and forming a sort of bend from above downward called the head, and the other extremity tapering, gradually forming the tail; the portion between the extremities forming the body." Verneuil unites the body and tail under the name, "*Portio gastrica seu lienalis.*" At the right portion there has always been found a greater or less prolongation called, by Winslow, the "lesser pancreas." The pancreas is situated transversely across the posterior wall of the abdomen, at the back of the epigastric and both hypochondriac regions. Its length, according to Gross, is "six to eight inches, its breadth one and one-half inches, and its thickness from one-half an inch to an inch." Its weight, according to Da Costa, "in a normal condition, varies from two and a quarter to three and three-quarter ounces, but may reach five ounces." Another author "weighed thirty-two pancreases and found the average weight three to four ounces." In structure, Gray says that "the pancreas differs from the salivary glands in not being enclosed in a distinct capsule, but is surrounded by areolar tissue, which dips down into the interior and connects together the various lobules of which it is composed." Horner says, "With the exception of a loose coat given it by the meso colon, it has no peritoneal covering." "Each lobule, like those of the salivary glands, consists of one of the ultimate ramifications of the 'pancreatic duct,' terminating in a number of cæcal pouches or acini. The minute ducts are lined by short columnar epithelium, shorter than that found in the salivary ducts, and the acini are wavy and convo-

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luted; they also are lined by columnar cells. The lumen of the alveolus is hardly visible, being filled with an interstitial substance containing spindle-shaped cells, the 'centro-acinar cells' of Dr. Langerhaus. The arteries of the pancreas are derived from the splenic—the pancreatico-duodenal branch of the hepatic, and the superior mesenteric. Its veins open into the splenic and superior mesenteric veins. Its lymphatics terminate in the lumbar glands. Its nerves are filaments from the splenic plexus." The pancreatic duct or "Canal of Wirsung," so called for its discover, in 1642, "passes transversely from right to left through the substance of the pancreas. It commences by the union of the small ducts of the lobules situated at the tail of the pancreas, and terminates by an orifice common to it and the ductus communis choledochus upon the summit of an elevated papilla, situated at the inner side of the descending portion of the duodenum, a little below its middle." Gray remarks "that sometimes the pancreatic duct and the ductus communis choledochus open separately into the duodenum. The pancreatic duct near the duodenum is usually the size of a quill. Sometimes the duct is doubled up to its point of entrance into the duodenum." Delafield observes of the pancreatic duct: "That concretions of carbonet and phosphate of lime are frequently found in it. They are usually multiple, small, whitish, of rough and irregular shape. Sometimes, however, they reach a diameter of more than an inch. Besides these free concretions, the walls of the ducts are sometimes encrusted with the salts of lime. Such concretions may produce dilatation of the pancreatic duct, and large cysts, or more rarely abscesses. Gall-stones sometimes find their way into the pancreatic duct. Ascarides have been found in the duct in a considerable number of cases. Dilatation of the pancreatic ducts, and the formation of cysts, take place in three different ways: 1st. The entire duct may undergo a uniform cylindrical dilatation; with this we sometimes find associated small sacculi. 2d. There may be sacculated dilations at some point in the ducts; these dilitations form cysts of large size, as large, even, as a child's head. Their walls become artheromateous and calcified. Their cysts often become filled with blood,

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and may be mistaken for aneurisms. 3d. The small branches of the pancreatic duct may be dilated so as to form a number of cysts. These cysts are filled with serum, mucus, pus, or a thick, cheesy material." Of the pancreatic fluid but little was known up to the middle of the present century. In 1823 "the Academy of Paris made this a prize question, and the analyses of Tiedemann, Gmelin, Leuret and Lassaigne incurred honorable mention, and paved the way for the discoveries (a little later) of Claude Bernard." Valentine "noticed, in 1844, that the pancreatic juice transformed starch into sugar, by experimenting with an artificial fluid made by infusing pieces of a pancreas in water." Bouchardat and Sandrus first noted this property in the normal pancreatic juice a few years later. These were followed by Magendic, Becourt, Lloyd, Elliatson and Andrae. M. C. Bernard was first to obtain pancreatic fluid from a dog, in 1848. Meyer was first to determine the alkalinity of the pancreatic fluid. MM. Leuret and Lassaign "drew off the pancreatic fluid from a horse, in 1850, and found it similar to that of a dog in consistency. The pancreatic fluid decomposes rapidly, viz: "At a temperature of from 50° to 70° Fahr. two days will be amply sufficient to decompose it." The pancreatic fluid is only secreted in abundance during digestion. M. Blondet "found no albumen present in the pancreatic fluid." The fluid secreted by the human pancreas, according to Gray, "is almost indentical with saliva, but contains no 'sulpho-cyanogen.' Its uses are, to some extent, the same as those of saliva, since it converts starch into dextrine and grape sugar." "This digestion is accompanied by the formation of various chemical substances—leucine, tyrosin, and indol—to which the odor of the fæces is, in part at least, attributable." Fothergill says "that it is only after the food has passed the 'pyloric ring' of the stomach that the digestion of fat commences." "A fat is a hydro-carbon, containing a small proportion of oxygen. It is formed when the assimilation of hydro-carbon is in excess of body needs. The surplusage is stored as fat or adipose tissue. This reserve is consumed when the food is insufficient in supply, and disappears on starvation. Stearine is the firmest of fat,

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oleine is the most fluid, then comes margarine." "Speaking broadly," remarks Fothergill, "the digestibility of a fat is in proportion to its stiffness when cold." But I digress. "When the food, now known as chyme, rendered fluid or semi-fluid in the stomach, passes the pyloric ring, it meets the alkaline bile, and becomes alkaline. Then the digestion of pepsin stops. Just as the acid gastric juice arrests the salivary digestion of starch, so the alkaline bile kills the action of pepsine. To this alkaline mass is poured out the secretion of the pancreas. This is a most potent, solvent fluid. It contains: 1st, a diastase, digesting starch; 2d, trypsin, a ferment, digesting proteids in an alkaline medium; and, 3d, an emulsio-ferment which acts upon fats." "The alkaline pancreatic juice forming with the fatty acids a saponaceous substance which is absorbed by the blood vessels." "It converts albuminous and gelatinous substances into peptones." "Under its influence the digestion of the starch left in the stomach after the salivary action is arrested, is resumed. The proteids are converted by the trypsin into peptones. The fat is emulsified in the presence of the bile. The solvable sugar and the solvable peptones pass into the blood of the portal vein. The fat is taken up by the lacteals in the intestinal villi and carried into the thoracic duct, and the waste is passed on to be voided, still acted upon to some extent by the intestinal juices." Draper estimates that the pancreatic secretion of a man of 140 pounds weight, in twenty four hours, amounts to, in weight, one pound and one ounce. According to Flint, the composition of the pancreatic juice is to 1,000 parts: "Water, 900 to 920 parts; organic matter, precipitable by alcohol, 90 to 73.6 parts; carbonet of soda, chloride of lime, chloride of potassium and phosphate of lime, 10 to 6 4-10 parts." Pancreatic juice is decidedly alkaline, slightly opaque, of viscid consistency, soluble in water, insoluble in alcohol, and coagulable by heat, with a specific gravity, according to Moot, of 1.008." Pancreatine may be precipitated from an acidulated infusion of the pancreas by chloride of sodium.

I shall not consider the pancreas as it appears in relation to disease and injury, and shall divide my remarks on this portion

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of my subject into two parts, viz: 1st. The symptoms and means of diagnosis of lesions, both acute or chronic, anomalies of structure, tumors, cancer, and including rupture and gunshot wounds of the pancreas; and, 2d, their treatment.

"The proper place to feel for the pancreas in diagnosis," states Holden in his landmarks supplementary and Gray's Anatomy, "is in the 'linea alba,' two or three inches above the umbilicus. On deep pressure it is perceptible to the touch in lean lean people with an empty stomach." Quain says: "Lay the patient on the back, (having the day before seen to directing such measures as would empty as much as possible the bowels,) and examine before a meal." "The normal pancreas," remarks Naphews, "of emaciated people is sometimes mistaken for disease of the transverse arch of the colon; and once under his own observation for aneurism of the abdominal aorta." "Some of the chief symptoms in simple pancreatitis are deep-seated pain in the epigastrium, with gastric disturbance, and some degree of pyrexia; intense and continued pain either of a dull character in the epigastrium or pain shooting back over the shoulders, eructations, and sometimes vomiting of a viscid liquid like saliva." "Suppurative inflammation of the pancreas is very rare; some of the cases described as abscess seem on post-mortem examination to be cysts with purulent contents. Chronic interstitial inflammation may result in the formation of new fibrinous tissue, with induration and subsequent atrophy of the organ. The contraction of this new fibrinous tissue may obliterate the pancreatic duct, may compress the ductus communis choledochus, so as to produce icterus, and even dilatation of the bile duct." It has been supposed by Dr. Roberts "that some of the supposed cases of 'Addison's disease,' with bronzed skin, are due to a disordered condition of the pancreas, but this only occurs when the solar plexus is involved in a certain morbid process," but just what that process was, Dr. Roberts neglects to state. "One of the chief symptoms of a diseased condition of the pancreas is permanent jaundice, due to closure of the bile duct. In some instances diabetes follows pancreatic disease, and in some others precedes it. In either case the diabetic condition does not depend on the pan-

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creas, but on the implication of the solar and cardiac plexus, and the semi-lunar ganglia, which are undoubtedly sometimes concerned in the development of glycosuria." Fatty stools show a diseased condition of the pancreas. Ziemssen says "clinical observations, with reference to the presence of free fat in the fæces, may show this symptom to be present in cases in which, without especial attention, it is overlooked, and it may be found that this symptom is of much value in the diagnosis of diseased conditions of the pancreas." Grisom reports "that in ten cases in which fatty diarrhea occurred, post-mortem revealed diseases of the pancreas in eight of them." In a case observed by Zenke, "the microscope showed that three-fourths of the stool, which was of a silver-gray color, consisted of fat crystals." Fatty diarrhea is mentioned by DaCosta as a "valuable symptom of diagnostic importance in the cancerous affections of the pancreas." "The pancreas may be the seat of both primary and secondary cancer, and it is not unusual for people affected with it, as in the case of Dr. Wilks, to die suddenly." Abscess of the pancreas is seldom noticed. Portal noticed several cases, however, which he reported in his "Elementis." Tumors are more common. Abernathy relates having observed two or three. Lancereaux has "found the pancreas indurated and the seat of gummy tumors." The "Sydenham Transactions" also mention several. Dr. Abercrombie has seen several instances of hypertrophy and partial induration; also of a softening of the pancreas, resembling medullary sarcoma." Schele mentions a case of "instantaneous death, in which autopsy revealed atrophy of the pancreas."

Loomis remarks that round celled sarcoma of the pancreas usually occurs as a melanotic tumor.

Zenker reports "three cases in which post-mortem revealed fatty degeneration of the pancreas." Zenker attempts to explain by stating that the pancreas "pressed on the coeilac plexus," and "the death was the result of reflex paralysis." Bumstead, "in several cases of visceral syphilis, has found the pancreas to be indurated and schlerotic, and believes it to be like most of the viscera, i. e., subject to the circumscribed and dif-

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fuse influences of syphilis." The changes in the pancreas caused by hereditary syphilis, have been carefully studied and exhaustively treated, by Osterloh, Oedmansson, Wagner, and Hirschfeld. In a case of Professor Charleson, that he placed in "charge of Professor Reuther, fourteen years after having contracted chancre, there was found, beside multiple gummata in the muscles, two in the pancreas." Rupture of the pancreas is not frequent. "The Medical and Surgical History of the Rebellion," surgical vol., under the head of wounds of the pancreas, reports four cases. S. Cooper observed a case of rupture of the pancreas without external wound, the patient being struck by a cart wheel, and, in the doctor's own words, "breaking the ribs, and literally smashing the pancreas," and was so revealed by the post-mortem. Of wounds Gross reports none, but gives "a case observed by Dr. Bozeman, in 1881, patient forty-one years of age. Case was diagnosed ovarian tumor; but upon operating, much to the surprise of the surgeon, the cyst was found to be connected to the pancreas, from which it was separated with a knife. The cyst weighed twenty and one-half pounds. The woman made a good recovery." Hamilton speaks of gunshot wounds of the pancreas, "that came under his observation, and of their fatal termination." The Medical and Surgical History of the Rebellion only reports "five wounds of the pancreas by gunshot," only one of which recovered. Vidal, as early as 1824, reported a case, followed by great hemorrhage. Agnew reports one or two cases of wounds of the pancreas. Calculus of the pancreas is very rare. "Its symptoms are, in addition to the dull, heavy sense of weight at the epigastrium and other symptoms of pancreatic disease, such as sugar in the urine, vomiting, fatty stools, sharp, irregular paroxysmal pains, due to the passage of the calculai, and some pyrexia." "In large concretions, these attacks of colic may be associated with jaundice." The calculai of Dr. Baillie's case were found to be of carb. of lime. "Gangrene of the pancreas, as a result of stricture from constriction in passage of calculi," has been noticed by Pontal, Bonetus, and others. Dr. Carter quotes Dr. Dupuytren as saying: "That enterorrhœa is caused

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sometimes by increased secretion of the pancreas." M. Mondiere "presumes that the fluid of pyrosis may proceed from the pancreas." "In exceptional cases," Dr. Roberts says, "of diseases of the pancreas, fat appears in the urine as well as in the stools, either in the form of oil globules, or a greasy substance, becoming like butter when cold."

The poor liver is often loaded with medicine when properly the pancreas is the deranged organ.

[The rule of the society, limiting papers to three thousand words, compels us to omit the account of the treatment of maladies of the pancreas.]

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DISCUSSION.

Dr. F. W. Beard—I don't know much about the pancreas, but I happened to be fortunate enough to make a post-mortem of, perhaps, the oldest subject ever dissected in Indiana—an old negro whose history ran over one hundred years. He had always lived in a malarial district, having spent most of his life on the Wabash river. The pancreas itself was normal. Having lived in a malarial district, we expected to find a large spleen, but it weighed just one gram, and was perfectly round and flat; about the size of a silver dollar. There seemed to be no using up of the pancreas, but the spleen was used up.

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Dr. Hibbard—Was he given to dramming in his life?

Dr. Beard—I think not.

Dr. Hibbard—I don't want to criticise the paper, but I will say that I think there is real profit in an investigation of that kind and presenting to us here the results of it. As has been said, we do not know a great deal about the pancreas; but if young gentlemen will read up and investigate the subject as Dr. Bryan has, and give us the benefit of his research, we will know more about it presently than we do now.

I think I would take some exceptions to the paper as to the essential service of the pancreatic juice in digestion, but I am not disposed to enter into that part of it. I do wish to extend my congratulations on the character of the paper, and hope we shall have more such in future.

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Should Consultations be Encouraged or Discouraged?

BY R. A. WOODS, M. D., SEYMOUR, IND.

Consultation is a matter of great importance to the general practitioner. It is a question that is very extensive and has many points connected with it that will bear elucidation and discussion. It is like the question of tariff in politics, high tariff, low tariff, or no tariff, owing to the position we take when considering the question.

That the present system of consultation, with the portion of the ethical code relating to it, is very defective and inadequate, is apparent from the diversity of opinion entertained by the profession in different localities and under divers circumstances. By some physicians consultation is encouraged, notably by specialists; by others is discouraged. In our own county (Jackson) there is scarce one who encourages consultation among his own patrons; but, to the contrary, discourages and at the same time is quite well satisfied to be the consultant in a case belonging to one of his neighbors.

Why is he desirous of being called in consultation with a neighbor physician?

For several reasons:

First. He receives a handsome fee for the consultation visit as compared with an ordinary one.

Second. He is given an opportunity to extend his business.

Third. He takes it for granted that the fact of his being called to consult is evidence that he is estimated highly on account of the qualifications he possesses, and will derive prominence and prestige from it.

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Why does the neighbor discourage?

For just as many reasons as the other favors:

First. It piques his pride and disturbs that portion of his cerebrum which presides over his pocket-book, to know that the visitor is better paid for services than himself.

Second. He wants no more active competition than he already has to contend with, as it will most surely result in a loss of business. The majority of practitioners have more time than patients.

Third. Though a man be a physician he is a man still, and is not willing to admit that his neighbor has superior knowledge and skill, unless he is a specialist and limits his practice to a very narrow field.

Having glanced at this matter as viewed by opposing parties, the fact that consultation is often very obnoxious is very clear. That at times consultation is profitable to patient and physician is admitted by all. It is perfectly right that the knowledge of several be combined for the promotion of a patient's weal. Consultation is customary in all departments of practical life. There is not a suit of any magnitude in any of the courts but several attorneys are employed in the defense as well as the prosecution. In time of war counsel is held among the commanding officers. Merchants and manufacturers consult with each other how best to obviate and circumvent obstacles that arise in their business. In the private family, matters of interest to the household are discussed by the fireside. In all pursuits and avocations of life it is customary to seek advice and have the minds of others engaged in the furtherance of the same project.

For such reasons it does appear that consultation in the practice of medicine should be more often resorted to than it is. To ignore and discard consultation would rob the specialist of his largest field of usefulness to the public and profession. The field of practical medicine is wide, the human mind very narrow; for that reason limitation is necessary in order to attain a high degree of proficiency and skill.

If the practice of consultation is to continue and become popular with the public, there are several items that demand attention at the hands of the profession.

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First, we may mention the fees, as that is the most fertile cause of objection among the generality of our people. They do not approve of paying a fee more than six times as large as the attendant's per visit, for a consultation visit by some other doctor, for no other reason, as they see it, than because it was a *con-sult-a-tion vis-it.*

That superior skill shall command higher fees is moderately clear to the plebeian mind, but it is slow to recognize superior skill, and again it is urged that this same consultant makes visits for the same compensation per visit as the attendant. He could have been employed at the same rate fee as the other man. This fact is in numerous cases the cause of the discharge of one physician and the employment of another instead of having counsel. Consultation should be placed within the reach of all, and made an every-day occurrence. The public must be deprived of the opinion that when a second physician is called in, the first one either does not know what is the matter with the patient, or that it is such a bad case that he can not manage it. When a second or a third attorney is employed in a case, it does not reflect in that way on the one that was first employed. It is merely viewed as a precautionary measure to secure success.

In surgical practice that point is more satisfactory. People at once recognize that it is of advantage to the patient to have more than one surgeon. Why is the populace of that opinion? It has been educated to that belief. Tangible reasons have been presented as arguments in its favor. The first step taken toward bringing about such a status of the question in view was that the profession united in giving a verdict; all members were pronounced in their views. Public opinion can not be courted with advantage. Its estimates of men and things are founded upon caprice and formed by prejudice, and for that reason must be either utterly ignored or vigorously controlled. To-day the medical profession fawns at the feet of public opinion in this matter of consultation. Very few practitioners ask to have counsel unless they believe their patrons are becoming dissatisfied and that it will sustain confidence to have some one step in and concur in the proceedings. If the patient

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or his friends ask for counsel it is because they are in doubt if the attendant understands the case, or is possessed of sufficient skill to treat it to a successful termination. The attendant may not be favorable to having counsel, and yet he does not object. Why? He dare not! Public opinion will cry out against him. He knows it generally to be a settled matter that "the doctor from over the hill," or elsewhere, will come regardless of him or his wishes. If he opposes, he is discharged without further ceremony, and the other doctor sent for to take charge of the case. His sole chances lie in being subservient to the wishes of others.

The position of a consulting physician is a delicate one. He is admitted to the case with a hearty indorsement of all who are interested in it, and whether or no he is really better informed than the gentleman in charge, the very fact of his being called will generally remove all doubt from the mind of the patient. If the case be a critical one, the friends coax themselves with great eagerness to believe that he possesses almost wonderful knowledge and skill. This gives the consultant a position where he has almost despotic power, and if disposed to use it to the detriment of the attendant, can do so with telling effect; appear as a hero to the public, shield himself against professional censure, and possibly even justify his conduct with the plea "for humanity's sake," "I was obliged to do so," "could, under the circumstances, not do otherwise."

Competition having become so intense, and the *bread and butter* question being the uppermost in the minds of the majority of practitioners, the part of the Code of Ethics regulating professional intercourse does not and can not be made to cover the field completely and satisfactorily. That the deficiency must be remedied is very evident. How can that be done? One way, and only one. Educate the public to the fact that two heads are better than one, and that consequently the results are, of necessity, better and more satisfactory; that two men uniting their ideas and views are equally responsible, and that they must share alike the credit of success as well as the blame of failure.

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CHRONIC ALCOHOLISM.

BY WM. LOMAX, M. D., MARION, IND.

Alcoholic inebriety has a definite natural history. Its distinctive features are so well marked as to leave no doubt or difference of opinion in the minds of those who observe them. And the evil is so widespread in the civilized world as to permit no one to be ignorant of its prevalence and destructive power. If let loose to prey at will upon the unprotected interests of society, it would prove a more unsparing destroyer than any other scourge in the long catalogue of human plagues.

There is no desolating evil which an intelligent and well-informed community would more sincerely deprecate; and none which a far-seeing jurisprudence would more anxiously provide against and avert. In every age of the world it has been recognized as a blighting scourge. Philanthropists have conscientiously resisted its ravages upon society in every conceivable manner. Argument, moral suasion, sympathy, kindness, forbearance, and every variety of moral influence have been exhausted upon it. Crusades, prayers, tears, mobs of pious ladies spurred to supra-masculine bravery have boomed above the law, battered down doors, fearlessly entered saloons, and boldly flooded streets and sidewalks with their death-dealing stores, hoping thereby in some degree to mitigate the direful work committed upon the community. Generous liberality has provided homes, retreats, associations for encouraging the unfortunate victims of the vice to assert their self-control and rise from the debauchery of drunken degradation to the respectability of sober lives. Laws have been enacted for the suppres-

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sion of the vice by imposing burdens upon the sale of intoxicants in the form of taxes, and prescribing penalties for certain offenses connected with the traffic. But so far all reformatory measures have signally failed to restore primitive sobriety in the community. And, it is said by persons having an opportunity of speaking advisedly in the matter, that drunkenness is as rife to-day as it has ever been, if not actually on the increase. The failure of earnest and studied effort to remedy the evil shows, at least, the stern and difficult nature of the problem. All agree that withholding the beverage, or abstaining from its use, would inevitably secure the desired object. This is a self-evident proposition. Discouraged by the results of former efforts, and distrusting all methods in which uncertainty is involved, the leading temperance workers adopted prohibition as an essential requirement to remedy this social calamity.

Prohibition appears still to be the policy of the more active and ruling element of the temperance party. In regard to the import of the term *prohibition*, the password of the party, there seems to be some ambiguity, if not discrepancy, associated with its meaning, or at least with the scope and details of its contemplated operation in the minds of those identifying themselves with the movement. Some are so ultra in their opposition to alcohol as to allow this one feeling to dominate the entire man. They have nursed their all-absorbing topic into a blind fanaticism which dogmatically asserts that alcohol is an unmitigated curse, without any redeeming qualities—that it has no useful properties which other remedies and substances do not possess in an equal degree without the liability to produce the grave consequences of drunkenness. They adopt the strict, literal signification of the term and apply it to the manufacture. Such radical proceeding would effectually wipe out all subsequent effects, uses and relations of the drug in every sense, and summarily close its history. The theory is based on an implied assumption that contact with the drug, as a rule, will corrupt the person, and therefore all should be concluded corruptible and subject to the humiliating inhibitory regulations required only for the drunkard. A thousand innocent

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persons should be made to suffer under this theory, rather than a single scalawag should be whipt of justice—a remarkable doctrine to promulgate in a Christian civilization, a libel upon the morals of the race. This teaching is refuted by facts staring us in the face every day. The proprietors of saloons are rarely drunkards. Their occupation as retailers require the constant handling of the dangerous thing, and yet there is a remarkable immunity from inebriety among them. Those engaged in its distillation, as well as those employed in the various arts, manufactures, professions and sciences requiring its use are rarely demoralized by handling it. The intelligence of this enlightened age will not forego the benefits of an agent of such diversified and in many instances indispensable usefulness because a few weak-minded and demoralized persons have not the moral power to resist the temptation to use it improperly. Prohibition is not the true spirit of moral improvement in the disposition of an agent of wide and varied usefulness. The interests of the human family prompt to elevation of moral sentiment, the culture and exercise of the noblest elements of our nature. High moral culture should have scope for labor and exercise to the extent of its capabilities in the realm of useful work. To restrict capacities for a broad field of usefulness to the circumscribed regime suited to the pensioners of public charities would be a ruling unjust in itself and disastrous to the material improvement of the world; a compound of madness and superlative folly. The more considerate workers in this benevolent cause, those of the better mental equilibrium, believe that the traffic in the drug might be so carefully guarded as to prevent the injurious results growing out of its promiscuous sale and use, and yet preserve to society all the benefits of its legitimate applications and uses. This proposition presents itself as the more feasible one, and should form the basis of any law the wisdom of the Legislature may devise upon the subject. It is a foregone certainty, as far as human sagacity can penetrate coming events and history, that alcohol will continue to be made and used for legitimate purposes by the wise and good, in whose hands it is safe and harmless, throwing the vicious phase of the subject into the hands of the law-making authorities to regulate by the application of such

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wholesome statutes as may be best suited to protect the weak and reform the vicious from the suicidal and murderous tendency of their own inherent depravity.

Drunkenness is a disease, a death-dealing disease, from which statisticians report 60,000 deaths annually in the United States. This appalling mortality occurs chiefly at the end of a chronic struggle, in which a wide wreck of hopes, happiness and fortunes drift upon its horrid wake. Its incipiency is a thoughtless, voluntary act, rather an indiscretion than a crime.

The first effect of alcoholic beverage is that of an agreeable stimulus, producing a cheerful flow of feeling, hilarity of mind, elasticity of muscles, running into a merry, jolly play of wit and humor, very enjoyable to the vivacity of youth, and not despised by the clever old fellows of riper years. Hence, it is admirably suited to give animation to a little assemblage of friends on convivial occasions. These little social revelries are fascinating to the youthful mind, and were their influence to go no further, no serious objection could be made to them. But beneath their fun and frolic there lurks a dangerous gorge into which the unsuspecting children of sport and gayety are liable to be drawn and devoured.

Repetitions of these libations insensibly form a habit. Those who have been betrayed and taken in by them had no idea of becoming drunkards. But while thoughtlessly, and fearlessly, and sparingly, as they thought, indulging in their potations, relying on the potency of their self-control for protection, the fell monster insidiously insinuates and fastens itself upon them.

A habit called dipsomania, or drunkard's thirst, is formed. They are now under the complete control of a dominating propensity which they have not the moral power to resist. It exists as a condition of the vital organism. The condition is an abnormal one, it is true; one that was born of vicious habits and indulgences; but it is nevertheless a force in the composition of the individual of as great power over his will as any of the normal promptings of nature. He is utterly powerless to resist it. The will is captured and perverted. It is made subservient to the demands of his insatiable thirst for stimulants. The will is the creature of an internal feeling or conscious demand for gratification.

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The depredation upon the mental constitution not only unfits the man for the duties of citizenship and the more sacred cares and concerns of the domestic relations, but inspires him with a viciousness of disposition, at times jeopardizing the safety of his family and the public. His imagination is perverted, suspicions aroused, and his manner and general character have become those of the drunken sot. The susceptibilities of the nervous system have become deranged and changed in function if not in structure. There is sluggishness of the intellect, and much of the time semi-insanity, with now and then intermittent paroxysms of furious mania.

The senses become so perverted as to create myriads of horrid images about the pitiable deluded victim, which frighten him into tremors, spasms, and sometimes sudden death.

The drunkard is lost to his family, to himself, and to community. He is not only a loss, but a positive burden and scourge in all these relations. He corrupts the blood of his offspring by entailing upon their constitutions hereditary tendencies to inebriety, insanity, epilepsy, and various other nervous and constitutional defects.

In the initial stage this disease appears in the form of a simple, social vice, which might be easily abandoned before the habit is formed. After this the case is very different. The inebriate has lost his power to resist the temptation. This does not seem to be appreciated by the sober portion of community. Voluntarily taking the drug seems to invest the act with the idea of crime in popular estimation, and the man is treated as if he had the known will-power to break off from the habit of drinking, when, in fact, he has no such power. I think this class of unfortunate men have not received the benefits of public commiseration their helpless condition deserves. They are evidently the victims of disease which the legislative and judiciary departments should recognize, not in a vindictive or punitive, but in a liberal and restorative spirit. It has been held by jurists that intoxication should not abate the punishment of crime, but if considered at all should intensify it.

That a man who would voluntarily put himself into a mental state by intoxicating beverages, in which his liability to

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commit crime is greater, should be punished as severely as if he had premeditated the act, and wilfully prepared himself for it by taking the stimulant to nerve himself for the horrid deed, is true. But this is rarely the case with drunkards. When they commit the graver crimes, it is almost always when under the influence of high excitement in a state of intoxication, and under circumstances showing there was no premeditation of the crime. In case of the criminal forethought, on the contrary, he has resolved upon the deed previously, and appeals to artificial stimulants to insure its performance. It is taken as a element of criminal success, dictated by his reason to insure greater certainty of purpose. And again, in case of detection, he may plead unsoundness of mind from intoxication as a means of escaping the operation of justice. In this case there is neither insanity nor drunkenness. It only exemplifies a dark, revengeful malice, connected with a high order of intellect employed in executing its hellish design. The alcohol is taken only to stimulate a disregard of the natural impulses of the human heart, which might weaken his energy and defeat his purpose to commit the crime. Such persons know how far to use the drug to serve their purposes, and then they cease. These persons are never drunkards. The drunkard has not the craft to deserve the penalties due to such crimes.

There are but few, if any, chronic inebriates who have not made earnest efforts to reform their lives. They are by no means ignorant of the fearful direction in which they are drifting, and put forth every effort they are capable of making to escape the gulf into which it must unavoidably plunge them. They resolve and vow, over and over, never again to swallow a drop of intoxicating fluid. But it is not long before an exacerbation of dipsomania attacks and overcomes them, and they are found with their cups again. When exhausted by the debauch, and they are languid, sour and relaxed, with nausea and headache, and all the train of bad feelings that follow what drunkards call a "good time," unbidden thoughts bring to remembrance broken vows and promises, lighting a devouring remorse upon their troubled consciences, literally overwhelming the pitiable creatures in gloom and despondency.

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Yet the noble instincts of the human soul are not wholly obliterated. When the storm of bacchanalian carousals subsides, reason, conscience, respect for an upright life, with a desire to enjoy its reward, spontaneously react.

Individual effort on the part of the victims of intemperance to reform themselves, and that of earnest, benevolent temperance workers to aid them in the noble undertaking, have probably filled the measure of their success as fully as they ever will or can. These efforts, as we have seen, have been rewarded in lamentable and discouraging failure to achieve their laudable aims.

The resources of municipal authority have been only sparingly and empirically experimented with. Its capacity as a remedial agent has never been thoroughly tested. Laws have been enacted at various times by our Legislature professedly intended to regulate the sale of ardent spirits, and to prevent intemperance in their use. So far, however, they have done but little good in the way of promoting sobriety or repressing drunkenness. They have usually been so vague in their terms, or their enforcement so feeble, as to enable those engaged in the traffic to easily evade their penalties—the license to retail being the principal burden encumbering the trade. As the retail business is recognized as a legitimate industry, it should be held responsible for all damages growing out of its business transactions. Injuries to persons or property of the inebriate's family and others—the loss of his time and services to his family, in consequence of the mental inequilibrium caused by the drug sold him, should be compensated for. This responsibility should be made valid by bona fide bondsmen of assured solvency sufficient to cover all probable damages that are liable to occur. The saloon industry is uncalled for by the real necessities of community. It derives its support almost exclusively from the unnecessary, and even injurious, consumption of his (the saloonist's) merchandise. The real desiderata of health and hygiene do not require large stores of stimulants, and when needed for medical purposes they are obtained from the drug store. Then, in view of the stupendous evils which flow out of this fountain of pestilence and prey upon the moral, social

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and material interests of society, in connection with the fact that for all medicinal purposes stimulants can be readily obtained in drug stores, their sale as a beverage should be prohibited by the strong arm of the law. Such wise regulations of the traffic as may adapt it to the wants of the people would contribute immensely to improve the present deplorable condition of our civilization in its relations to alcoholic inebriety.

That the intellect and judgment of the inebriate are so disturbed during the exacerbations of his malady, as to render him incapable of transacting the business of his avocation, upon which his subsistence and that of his family depends, is a patent fact, doubted by no one. After the habit has been formed the inebriate has not the power to resist it, is another fact, with a few rare exceptions, equally substantiated.

In this view of the subject, the duty of the State to take care of and provide for the restoration of confirmed inebriates is as morally binding as it is to extend similar charities to the insane from other causes. The inducements to benevolence are even greater, as desirable results are more promising. The asylums have been much more successful in reforming inebriates than the organized temperance workers. The latter, it is said, have succeeded in reforming ten per cent. of those taken under treatment by moral influences, while the success of asylums has been thirty-three per cent. Those treated in the asylums are thought to be of the better class. They go voluntarily and submit themselves of their own volition to treatment from a desire to obtain a cure.

A serious detriment to the success of these institutions is said to result from the imperfect control the management has over the patients. Being voluntary, the patients exercise the right of leaving whenever they please, and also to be consulted as to restrictions placed upon their treatment. Under these conditions absolute prohibition can not be enforced, and in many cases it is a *sine qua non* to the cure.

This is a disease in which the judgment of the patient is exceedingly liable to err, and the right of determining the treatment to be employed, and also when the cure is complete, should be delegated to a competent person in the management

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of the institution. These embarrassments to successful treatment would not be in the way in a State charity; and in almost all cases the patients would become restored by perfect inhibition of the offending drug. The term required to effect a cure would vary according to the hold the habit had gained upon the system and the inherent will power of the patient to conform his habits to the dictates of a correct judgment.

A law embracing the main features of temperance work herein imperfectly shadowed, well matured in its details, and vigorously enforced, would guarantee to the inmates of the asylum all the benefits of prohibition which this potent remedy has in store for the drunkard. It would also have the most salutary hygienic effect of arresting many incipient cases before developing into mature inebriety.

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Cancer of the Eye—Histological Remarks.

J. O. STILSON, M. D.

There appears to be an idea prevalent in the minds of most medical men, that there is such a thing as a cancer cell, and that the microscope is expected to demonstrate it; that an expert should be able to take a drop or two of protoplasmic matter, or a few fibres of some tissue, and by means of the glass say whether or not, it is cancer. Now, if I can succeed in presenting just this part of the subject in its true light, I shall be satisfied.

We talk of cells in the body, we speak of pus cells, blood, lymph, tissue, bone, brain and other cells. One of the first things we look for when we buy our new microscope, is a cancer cell. The microscope is one of the most valuable aids to the physician. It has long since ceased to be a mere plaything, as some wish to still call it. As a factor, the clinician can no longer dispense with it at the bedside, along with his thermometer and stethoscope. Yet it has its limit of range, and it is mainly just here where, when understood and fairly and honestly applied, without pedantry or deceit, that it proves oftentimes simply of incalculable value. But that even the best histologists pretend with it alone to differentiate, and say just when one cell is healthy and another morbid; just how large or small, or of what shape a cell must be to be malignant, is far from true. The origin of the tissue growth, whether it is typical or atypical, its relation to the surrounding structures, the general history

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and all other information must be procured before an opinion that is worth anything can be given. The word cell is a very unfortunate word in this connection; all histologists deplore the fact that it ever got into the literature. It does not express the idea of those bodies, which we are accustomed to speak of as belonging to the term. Judging from analogy, as the word is used in speaking of the structure of plants, we have "a cavity bounded by walls, in the interior of which is a nucleus." Müller first proved that the cells of the chorda dorsalis possessed walls. Schwann first demonstrated the existence of the nucleus; yet Schwann denied the existence of a cell wall in the corpuscles of pus and mucus. Max Schultz claimed that by certain reagents he could show a wall to the human red blood corpuscle, a position now well known to be erroneous. Even leucocytes, which apparently have a well defined periphery seen as a clear line, resembling a membrane, present certain appearances at times which make it very doubtful whether they possess walls.

Max Schultz afterwards defined the cell as a little clump of protoplasm, or matter with a nucleus. Here we run against the fact again that some have no nuclei, the red blood corpuscle of man for example; others have no well defined walls, and the bone cells or osteoplasts, for example, are as far away from the idea of a vesicle as it is possible to imagine. If a word had been coined analogous to protoplasm it would have been a great blessing to histology. Inasmuch as nearly all tissues contain largely water, the term protoplasm, or primitive juice or fluid, conveys a clear and acceptable meaning. Now, if we had a word like proto-corp or proto-corpuscle, meaning primitive or embryonic body, as representing the idea of these minute bodies in the various tissues, nerve, bone, tendon, etc., instead of the vesicular and false term cell, which means really nothing, as it is used, how much better would it be. However, like Banquo's ghost, the word cell will not be ignored, and so we go on using it. I shall beg to be understood as using the term cell therefore, as it is usually accepted; namely, as a body meaning fluid in one place, solid in another; in fact, having a variety of meanings, according to position.

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CASE I.

On March 28, 1879, Mr. Y., of Mount Vernon, Ind., was sent to me with his little daughter, a very interesting child of eight or nine years of age, in order to have an operation made for cataract. He brought a letter of introduction from Dr. Blunt, who was his family physician, and who had observed a whitish glistening object behind the pupil, presenting the appearance of an opaque lens. The age of the child, together with the history of the blindness, was of itself enough to attract attention and to cause some doubt as to the real nature of the case. The parents had discovered about a month or six weeks prior to that time that the child's eye was apparently without vision. There had been no pain; there was no history of cataract. Their attention was first attracted to the condition of the child while at play. It discovered, by accidently placing the hand over the other eye, that the affected one, the right, was blind. Several weeks afterwards, the whitish appearance of the pupil led the doctor to conclude that it was a cataract. Upon examining the eye with the ophthalmoscope I discovered that the lens was clear and seemingly as yet normal, but behind it there was a pinkish white metallic reflection which came from a body occupying more than half of the vitreous. Several vessels were seen upon closer examination, and I made out a diagnosis of tumor of the retina. It was with no small degree of pain that I was forced to give the father a very sad prognosis. When I told him it was cancer, and a very malignant form, which admitted of no delay, he was inclined to think that there was some effort on the part of a perfect stranger to trifle with his feelings. However, after kindly and plainly presenting the matter in its true light to him, he concluded to take a letter from me to his family physician and return home. In about two weeks I received a letter from the doctor, in which he stated that he had counselled Mr. Y. to leave the case entirely in my hands. Accordingly, I set a day and went to Mount Vernon, where I enucleated the eye, Dr. Blunt and Dr. Elwood Smith assisting. The usual enucleation operation was made, after which I opened the globe and found that the tumor had

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increased in size until it had nearly filled the vitreous. The lens was beginning to become opaque. I placed the eye in alcohol, and hardened it by the progressive method. The case made a good recovery, and after six months began wearing an artificial eye, which up to the last reports, a month or two since, had shown no signs of any trouble whatever. This case is still doing well at the end of five or six years. I am quite sure that had the operation been postponed as many months, there would have been a relapse, with a certain fatal termination. The tumor is one of peculiar consistency. It has the brain-like appearance of tumors of this class; it is easily crumbled; will break upon the slightest manipulation; is very difficult to cut into sections; there are scarcely any fibres in it; no well marked stroma net work; some few embryonic vessels, and histologically it shows a granular structure, composed of small round cells, which easily separate; it contains no pigment to amount to anything; has no attachment to the choroid, but seems to have developed entirely from the retina. Woodhead, in his excellent work on Pathology, describes two kinds of glioma—one having numerous embryonic vessels and large stellate neuroglia cells, called Deiter's cells, having well defined nuclei, with granular contents, the cells themselves being supplied with numerous pointed proscesses which run out in all directions, meeting in a well defined net work or plexus, forming a complete reticulated mass throughout the structure. These neuroglia cells are nearer like embryonic brain cells, or ganglia. The other form of glioma he classes under the small round celled sarcomas. This one is of the latter class. The cells are all small and require a magnification of about 600 diameters to be well seen. They seem packed together in an irregular mass, having no intercellular connection or stroma. The diagnosis was made as glioma of the retina; variety, small round, called sarcoma—very malignant.

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CASE III.

James S., aged about 46, was at my office during the spring of 1882 in company with another patient, and had me examine

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his right eye, which was blind and which had been so about a year. It had occasionally given him some pain, but a few doses of morphine had relieved him. He had used occasionally warm applications to his eye, and there had been periods of several weeks when he was free from pain. Again he would suffer. Upon ophthalmoscopic examination I found the lens clear, pupil dilated and insensible to light, vitreous turbid, smoky, with large floating bodies, complete atrophy of the optic nerve. The retina intact on the inner upper and under portion, but downward and outward a large, dark choroidal and retinal elevation, which at first seemed like a foreign body, but after some further examination I made out a diagnosis of tumor of the choroid and advised immediate enucleation. He was, however, very wise in his own mind, would not hear of an operation, did not believe it was cancer, and, somewhat in disgust, left my office. About three months afterward I met him one day on the streets of Evansville, and he began telling me of a course of treatment he had been taking to remove the "scum off'n his eye." His lens was now opaque, dirty brown; eye very much inflamed, and presented the appearance of acute and violent inflammation. He wanted me to take his case, came to the conclusion he had better get rid of the eye. In about two weeks he came to my office suffering very much. Had not slept in several weeks. There was general inflammation, cloudy cornea and aqueous, high tension, no exophthalmus, great pain and suffering, which large doses of morphine failed to relieve. With the kind assistance of Dr. George C. Perdue, who administered the chloroform, I enucleated the eye, cutting off the optic nerve well back, as a precaution. The patient awoke from his sleep perfectly relieved, took no more morphine, slept well the first night, and made a good recovery. Nearly three years have now elapsed, and no recurrence as yet. The tumor, as you will see, is about the size of a large bean; it occupies the lower and outer part of the cavity of the eyeball, behind the equator. The vitreous was perfectly disorganized and chocolate color, no doubt from hemorrhage and general disorganization. Microscopically the tumor is composed of spindle cells, almost entirely. It suffers some teasing, yet the tumor itself is not hard,

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nor fleshy. It seems to be composed of branching and interlacing network of vessels and connective tissue, mixed with pigment and some amorphous material, evidently broken down choroidal tissue. The diagnosis was made out: spindle-celled sarcoma. I am of the opinion that if it had gone on it would have become melanotic.

CASE IV.

Mrs. H., from Elizabethtown, Ill., came to see me shortly after my removal to Indianapolis. She was a well-preserved and otherwise healthy-looking lady of about fifty years of age. She had lost the sight of one eye several years ago. About three or four years since she noticed the eyeball growing and occasionally had some neuralgia(?). The growth increased in size slowly but gradually, finally became annoying, protruded from the socket, would bleed upon the slightest touch, and frequently would bleed severely. When first seen there was a large, blackish mass, extending beyond the lids and showing every symptom of malignancy. Dr. Thompson was kind enough to see the case with me at St. Vincent Hospital, and made the diagnosis: Melano-sarcoma. On April 27, 1884, Drs. Newcomer, Thompson, Eastman and Sutcliffe were kind enough to help me, and we removed a large, cancerous mass, which completely filled the orbit. The hemorrhage was but slight, in fact, much less than I feared it might be. There were no unusual or unfavorable symptoms, and after a week's treatment the orbit healed kindly and the lady left for her home. It is now about one year since this tumor was removed. There has been no relapse as yet, but the lady, I am informed, has had a spell of sickness, lasting a week or so, and occasionally has some symptoms about the liver, a remark which you will observe is not without significance. I have made several sections of this tumor, hardened in alcohol. Some of them I have stained in carmine, some in hæmatoxylon They all show well-defined, large, spindled cells, arranged concentrically in nests, and territories with general stroma of similar cells, which show nicely

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on teasing. Interspersed throughout the tissue will be seen melanotic pigment in great profusion. Diagnosis: Spindle-celled melanotic sarcoma.

CASE V.

My last case is one of considerable interest, from the fact that we have here a tumor, similar to the two last reported, yet one which developed very slowly up to the time when we have a history of trauma, then it began to grow with perfect fury, and we have a rapid relapse, with a certain fatal prognosis, which is yet to terminate the case.

John S., of this city, consulted me last May. He had one eye, the right, partly blind for several years. Does not know how long. Does not trouble him, thinks it hereditary. His father was blind in one eye, for several years before he died in Germany. Never knew what the disease was. Does not wish treatment, simply wants to know what is the matter. The media are clear, pupil dilated, feebly active. Ophthalmoscope reveals outwards, upwards and downwards, a large detachment of the retina. Inwards, a triangle of the retina in place, vision, outwards, corresponding to inner sound retina, internal large scotomia in field corresponding to the detached retina, which fluctuates on motion, and shows presence of extravasated fluid behind it. Three months later on, the 23d of August, 1884, he applied to Dr. Eastman, for neuralgia in and about his eye. The doctor sent the case to me, and I found that the detachment had increased but was not complete.

The tumor which was probably behind the retina and no doubt small, was not visible. Partly for diagnostic purposes, and partly with the hope of relief, I undertook to aspirate the subretinal effusion, and succeeded so far as the aspiration was concerned. With a hypodermic needle, passed through the sclerotic outward, and downwards behind the equator, I drew off nearly a half drachm of clear amber-colored serum. The patient was placed on his back and kept there about a week. His vision returned in a considerable degree, he could count fingers about six feet, the pain entirely ceased, the eye became quiet, all inflammation disappeared, and he went to work.

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On September 6th, he returned with great pain, violent inflammation, and completely blind in that eye; I advised immediate enucleation. He hesitated, consulted Dr. Thompson, who advised enucleation, and on September 13th, one week later, I removed the eye. The whole vitreous was coffee-colored and a melanotic mass filling over half of the eye ball was found growing from the choroid. We have now a period of six months in which the patient remains comfortable, health good and able to work. But on March 15, 1885, he again presents himself, saying that he has a new eyeball growing, which is simply a return of his cancer. It has filled out the socket, and approaches the lids which he can just close over it. His health is beginning to wane, he has vague uneasy feelings of some impending calamity, melancholy, and no doubt will, before long, die of cancer of the liver. (Died of cancer of liver three weeks after this paper was read.)

The diagnosis of benign or malignant growths by the microscope alone is one of the most difficult things to do. New formations must be always studied with reference to the organs in which they begin. Sometimes the line of demarkation is very uncertain between what is sound and what is to be regarded as malignant, even the cell structure gradually fuses from one form into the other, so that much experience in manipulation, and long acquaintance with the morphological elements of various tissues, physiologically and embryologically, is necessary to the formation of an opinion. These elements, which as above stated are unfortunately so often termed cells, are in some cases vesicular, sometimes round, sometimes oblong, spindle, stellate, and of very irregular shapes and sizes. As a rule, they resemble, especially in the sarcomas, the embryonic tissue, which you would find in the structure of the same organ while it is undergoing development in uterine life. And as a rule, it is now thought that in many cases, pathological new formations start from a few or numerous cells that have been left in their rudimentary state in the tissues. We, therefore, have what is called types of tumors, or new formations. I think Green's classification is about the clearest and best. He first speaks of growths as typical, by which we mean that a growth

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resembles in structure the organ or part of the body where it begins; for example, chondroma, or osteoma, growing out of bone or periosteum, because the type of the growth is similar to the type of the structure; and next, as atypical or of a different type, an encephaloid tumor growing out of muscle, would be atypical, because its morphological elements do not resemble those of muscle homologous heterologous.

Connective tissue corpuscles, when they complete their evolution, become physiological elements in the adult body, and complete their cycle of life along with that of the body. But according to Cohnheim, we frequently find, in various parts of the system, isolated groups or islets of embryonic cells, the evolution of which became arrested at birth, and are to be regarded in the light of "embryonic remains." (Green, p. 125.) These cells remain inactive for many years, perhaps, for a whole lifetime. Yet they never lose the ability to grow, and proliferate and multiply, just as they formerly did in foetal life, except that when, from some exciting cause, they do start to grow, they grow without any guide, rule or control whatever, hence, they develop in one place into dermoid cysts of the ovary, acquiring by growth, the semblance of bone, teeth, hair, skin, muscle, etc., all irregularly joined, and without any rule of union. In other parts, they become like the organs where they lie, homologous tumors, or become wafted by the circulation into other parts and give rise to heterologous growths.

Dr. Gerster, in the New York Medical Journal, February 28, makes an unanswerable argument in favor of early and speedy operations for the removal of growths before any possibility can occur for cells to become detached and cast off, either into blood-vessels or lymph tubes. He condemns unnecessary handling, manipulation, massage, etc., so often seen in preliminary examination before operations. No doubt in this way cell elements become squeezed and forced into lymph tubes, or capillaries, quite a distance out into the tissues, and give rise to dissemination, which, possibly, might be avoided. He quotes Billroth as saying: "I consider it most highly probable that both the continuous (adjacent) and discontinuous (secondary) spread of carcinomata are effected by the

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dissemination of corpuscular elements, but admit that so far we are unable to prove this in all cases." I think that this fact of itself is of considerable value in explanation of the tendency of melanoid growths, to recur in the liver, while the gliomas more usually seem to prefer the brain as points for secondary attacks. In the one case the pigmentary cells from the choroid, containing melania, probably run the complete round of the circulation until they come back to the liver by way of the portal vein, and here, when there is an attempt to convert the melanotic substance into bile pigment, as hematin is converted, we find the organ complaining of an impossible task by throwing down the melanotic cells in the interstices of its own structure, and these, warmed into new life, set free from their former environments, now take on a rapid embryonic development and become uncontrollable.

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Strangulated Hernia—Two Puzzling Cases.

BY WILSON HOBBS, M. D., KNIGHTSTOWN.

One very frosty morning last February I was called to ride four miles in the country and operate for strangulated hernia. Having prepared myself with the necessary means for such an operation, I called upon the patient. He was a tall, lean, colored man, thirty-five or forty years of age, with the general aspect of deficient constitutional vigor and force.

I learned that he had been suffering with an inguinal hernia of the right side a long time, and had, for many years, worn a truss of some kind, but I did not see it or learn the pattern. The bowel often came down a little way, but never into the scrotum, and was easily replaced by himself. No physician had been called in to reduce it until the present attack. It had never hurt him much, or given him much trouble of any kind. About a week before I saw him, he thought it down, and irreducible by himself, and he sent to a village near by for assistance. I am informed that the doctor who was called could not clearly define a hernia, but satisfied the patient by making some effort at reduction by taxis. The sensations of the patient were such that he thought the hernia reduced. Although he was relieved from pain and the tension before felt in the hernial region, there was no effort at recovery, and no action of the bowel could be procured. Another doctor was then sent for, and by turns another and another until four had been called before me—so reported to me by Dr. Drake, of

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Carthage, whom I met at my visit. All who had seen him observed the increasing evidences of obstruction of the bowel, but none had been able clearly to define the cause.

I arrived at the bedside at 11 A. M. The temperature of the patient was normal; pulse 120 and quite feeble; was hiccoughing, but very softly. There was occasional retching at intervals of five or six hours, but no stercoraceous vomiting. There had been no evacuation per anum since confinement, one week before, except what was supposed to come from the large intestine, although industriously plied with cathartics and clysters. The countenance was pinched and anxious. There was a little tenderness over the abdomen, and a little meteorism, but neither in any considerable degree. There was a very little tenderness in the region of the right hypochondrium or inguinal canal, which he pointed out as the seat of the difficulty. There was no tumor in the canal which could be touched by the finger or perceived by the eye. The finger could be easily passed up the canal to the internal orifice, but the orifice could not be defined. The cough impulse was carefully sought after, but in no measure found. There seemed a slight fullness over and in front of Pouparts' ligament, toward the symphysis of the pubis, from the internal ring, but little or no tenderness there. This fullness was attributed to the thickening of the integument from the long continued pressure of the truss. Careful and repeated examinations furnished negative evidence of hernia, and as was supposed sufficient reason to exclude it in the diagnosis. I could not believe it possible that a hernia could exist in that region without affording other evidence of its presence than intestinal obstruction and the concealment of the internal ring from the touch, and especially that a hernia in a dangerous state of strangulation should be thus shut in from discovery. I thought to make an incision through the coverings into the inguinal canal, and introduce my finger directly into the canal, so as to explore it without the coverings otherwise carried, but there seemed no excuse for so rash a proceeding, so the question of hernia was dismissed, and the obstruction was sought for in other quarters. Dr. Drake was with me, and saw no reason to dissent from my conclusions.

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We therefore administered a very copious injection of warm water, not less than a gallon, thinking thereby to dislodge the obstruction; this was discharged and repeated, but no fecal matter passed. We then ordered large doses of castor oil, repeated at intervals of 3 or 4 hours, and this to be accompanied by proper means of support.

The family were ordered to report to me early the next morning, if the patient was not before relieved, when I had it in my mind to explore the inguinal canal with the uncovered finger.

Six hours from this time the patient was dead. By much persuasion we obtained permission to make an autopsy, which we did 36 hours after death. The abdomen was but little swollen, and all the appearances were much the same as during life. An incision was made from the umbilicus to the pubis, from the top of this a horizontal one to the right, fully exposing the intestines in the right hypochondriac region. When uncovered these presented little change from the normal state, except slight reddening and injection of the vessels. There was not more than the normal amount of fluid in the abdominal cavity. The color of the peritoneum deepened downward and to the right. On passing my hand under the flap to reach the site of the right internal abdominal ring, I found a cord which firmly bound the intestine to the abdomnial wall. I then made an incision in the large flap until it opened the ring, when I discovered 4 or 5 inches of the bowel imprisoned in a cavity formed along the line of and above Poupart's ligament.

The appearance presented was that the hernial tumor had been arrested in its descent immediately after escaping from the abdominal cavity through the internal ring, and that the inguinal canal had been deflected from its normal course and had taken a horizontal direction inward along and above the upper margin of the pubis. The imprisoned bowel, which was the lower portion of the ilium, was firmly packed into this cavity. It was collapsed and firmly condensed by pressure. Its vessels were much congested, but there were no ulcerations or attachments and no appearance of disorganization. The canal was closed at the inner extremity of the sack where the acute

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angle of the canal was made. The lower portion of the inguinal tract was normal, except that it was bent inward toward the acute angle.

The man evidently died from shock, certainly not from inflammation.

I am satisfied after a careful study of the case, that its peculiarities were produced by an ill-adjusted truss. Certainly the truss did not press upon the internal opening of the hernial canal, else the intestine could not have escaped from the abdominal cavity at all. Had there no truss been worn the tumor would have taken the course of the canal toward the scrotum. But withthe pad upon the canal, and the pressure so adjusted as to allow the intestine to pass the ring but to be arrested immediately below, the protruding force, I suppose, carried the tumor and the upper portion of the canal containing it, to the position in which this was found.

But to me there is a more serious question than the explanation of the occurrence of this strange phenomenon. Was it possible to have discovered this strangulated tumor before death, and to have liberated it?

My study of the parts in *situ*, in the light of my careful inquiries before death, lead me to the conclusion that the only means of discovering the true situation at the time I first saw the patient, six hours before death, was by the eye, after fully displaying the parts with the knife. I do not believe had that the finger been passed uncovered into the inguinal canal, a hernia of the bowel in the unexpected situation in which this was found, could, by the touch alone, have been separated from the surrounding parts.

While it would be impossible to reach the internal abdominal ring without touching the bowel, it could not be reached at all by search in the only direction any one would think of searching for it.

Besides this, in a case of obstruction of the bowels, when the chief, if not the only evidence of the cause of the obstruction being a strangulated hernia is that the man has worn a truss, there being so many and so diverse causes of obstruction, would it be a safe or justifiable proceeding to rip open the inguinal

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canal from end to end in a search for a lost bowel? There is no question of the propriety of such an operation, if necessary to liberate a known strangulated hernia; but thus to make search for such an one, when its existence is denied by almost every known fact in the history of hernial tumors, is quite another matter.

Neither experience nor study, previous to the occurrence of this case, has afforded me any hints of an accident of this sort, nor has my later reading been to any better purpose.

While the subject of strangulated hernia is before us, I beg leave to say and to illustrate the fact by example, that the diagnosis of strangulated hernia is not always the easy matter it may be thought to be.

A few years ago I was called to operate and did operate for a strangulated hernia, upon a man who was not aware that he had then or had ever had a hernia. For ten or fifteen years he had noticed a small tumor in the right groin, but it was scarcely noticeable, ever remained in about the same condition and had never given him any trouble. He thought it an enlarged gland or something so, and as he suffered no sort of inconvenience from it, he asked no advice about it, and scarcely retained the consciousness of its presence. After a day's work in July pitching hay he was taken violently sick at night with vomiting. He sent to a village near by for a physician, who at once put him on treatment for cholera morbus. This sickness continued throughout the next day and night. The next morning he was no better and he decided to change doctors. The second physician also addressed himself to the gastric irritation and with no better success. On the third day the third doctor was called in. The last called made diligent search for a more satisfactory cause and diagnosis, and his inquiries brought to the front the tumor in the right groin, which was found very tender to the touch. This was decided to be a hernia, and after some efforts at reduction I was called to operate.

I found all the prominent symptoms of obstruction of the bowels and of a strangulated hernia. After the patient was completely anæsthetized I made efforts at reduction in the usual way, but found the tumor fixed in its place, so that it could

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not be dislodged. On cutting down upon it there could be found no line of separation between the canal, the sack, and the contents. All anatomical distinctions were blended into a mass of connecting tissue. The knife was little used. The finger and the scalpel handle served, by careful use, to so liberate the bowel and open the ring as to enable me to return the mass into the abdominal cavity, after, certainly, breaking down the constricting bands. The patient made a good recovery.

This case has admonished me to inquire carefully as to the existence of hernia in all cases of intestinal obstruction, even though the patient should give no hint to call attention to such a condition.

The first of these cases has been one of serious thought to me. I can scarcely say that I have learned more from it than this, viz.: Other means having failed to remove obstruction of the bowels in a case of suspected strangulated hernia, I shall be more ready than ever before to give the patient the benefit of a doubt when the internal abdominal ring can not be well defined, having been taught by this that the location of a hernial tumor is not always in the line of the inguinal canal. Still it is due me to have it remembered, that Dr. Drake and myself had fully determined to explore the canal in search of a strangulated intestine, had the patient survived until morning without improvement; and it is quite improbable that he would have recovered from an operation made so late as six hours before death.

DISCUSSION.

Dr. Eastman—Mr. Chairman, I was much interested in the paper of Dr. Hobbs, and certainly there is an important lesson in the conclusion that he draws in his final remarks.

I have generally been quite successful in reducing strangulated hernia without cutting, and yet I am afraid, in some instances, I might better have used the knife. If we proceed cautiously and perform the operation cautiously, we certainly do not risk the life of the patient.

Dr. Wiest—Mr. Chairman, it has been my fortune to operate

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a good many times, and to be called in consultation in cases of obstruction, and I have been led to the conclusion that if there is any one lesson in surgery that the medical profession should generally learn, it is to be more careful in the diagnosis of a case. I have had this feeling intensified in the last two months by the cases of two ladies, where it was insisted by the medical attendant that there was no hernia, but we were able to demonstrate in a short time that there was. I recognize that it is very difficult often to recognize, with absolute certainty, strangulated hernia. A careful and exhaustive search should always be made, and wherever there is evidence of a local trouble in the region where herniæ usually present themselves, whether there is any swelling or not, then it is advisable for the surgeon to make operation with the knife, and this is practice that should certainly be followed wherever there is swelling. But the point I wish to enforce on the attention of all medical men, especially those that are not surgeons, is, wherever there is vomiting and evidence of strangulation to make a long and careful examination. More than a dozen times in my experience have I been called to cases of strangulated hernia where one or two physicians declared that there was no hernia, and the patient declared he had never had hernia, and yet we were able to find hernia.

Dr. Kithcart—Mr. Chairman, I would like to call attention to the case of Dr. Austin, a resident of my county, one of the oldest practitioners in Northern Indiana, and of more than usual ability. He had been afflicted for more than thirty years with hernia, and for a number of years before his death it sometimes became very large. He had been in the habit of reducing it himself, sometimes with great difficulty and extraordinary violence. He often called on me to administer chloroform and reduce his hernia. For a number of years he was in the habit of taking chloroform himself and reducing the hernia. He assured me that frequently he would lean with all his force against the corner of the fence in order to push it back, and sometimes would work for hours. One morning last July, having taken a cathartic the evening before, the hernia came down and became strangulated. His son-in-law, a very in-

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telligent practitioner, was not notified, but he endeavored, with the use of chloroform, to reduce the hernia as he had done many times before, but, after working several hours, he sent for his son-in-law, who repeated the effort several times during the day. About four o'clock in the afternoon I was called. He had taken, I think, about one pound of ether during the day, and something like a half a pound of chloroform. We were greatly astonished at the unusual force applied, but were assured that it was nothing unusual, and were led in that manner to apply much greater force than we believed afterwards was proper. We united our efforts, but failed, and then concluded that an operation was necessary, but the old doctor insisted on another attempt. We made still further attempts, but of course they were futile. We then operated in the usual manner, losing no more than an ounce of blood. The hernia was reduced, and we left the doctor in what we thought a good condition, considering what he had undergone. The next morning, however, the doctor died, and I can never forgive myself for the part I took in the unusual practice in that case.

Dr. Meyers—Mr. Chairman, In cases of this kind I usually administer ether, use pressure in the part for a short time without any violence, and then proceed to perform the operation, and reduce with the knife, and where this course has been pursued I have very often been successful without cutting.

Dr. Chambers—Mr. Chairman, I regret very much that I did not get in in time to hear the paper on the subject of Strangulated Hernia. Of course in my practice I have had occasion to deal with some cases of this character. One point I would like to impress is the absolute necessity of any man, who professes to do these operations, familiarizing himself with the anatomy of the parts affected, and in no way can this be better done than by frequent handling of these different layers as one meets them in the dissecting room, and better still as one meets with them in the well-nourished body, such as we are apt to meet with in operations. Frequent handling of these parts is the only way I know of by which we can become sufficiently familiar with them.

Dr. Hobbs—Mr. Chairman, The two points of especial inter-

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est in this paper do not seem to have been taken hold of in the discussion of this question. One point being the unusual direction which the hernia took. Herniæ are usually found in the direction of the hernial canal, but here I suppose the canal had been forced out of the ordinary position. The hernia did not lie in the line of the hernial canal.

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Addison's Disease—Report of a Case.

E. HADLEY, M. D., INDIANAPOLIS.

It is not the intention in this incomplete essay to present the minute symptoms of the reported cases, or of Addison's disease of the supra renal capsules, but rather the conspicuous features of both.

The first case herein detailed was seen by me, at intervals, from December 2 to December 20, 1884, and was diagnosticated Addison's Disease. The subsequent post-mortem examination, made December 22d, seem to confirm the diagnosis.

The following was the condition of the patient: Female, age 49; she was profoundly anæmic; of a ancient dingy or smoky color of the skin; had abundant diarrhea; was much troubled with vomiting; suffered with aching along the spine; there was considerable tenderness on pressure over the region of stomach and liver; the urine was very red in color.

There did not seem to be present that great degree of feebleness of heart that is usually mentioned in connection with these cases; neither a very great degree of asthenia, as she had, till very recently, walked about the room, and even found her way up and down the stairs of the house.

During the second week of my visitations the asthenia increased, and the ankles became œdematous. The skin now rather suddenly assumed, i. e., in a couple of days, a bronzy color. The palms and soles remained natural; the whites of the eyes appeared unnaturally white.

This bronzy hue, after intensifying for near a week, disappeared during the course of a day and night, coming again

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a few days before her death, which occurred December 21st. The manner of death was from asthenia of heart. She smothered in great agony. During the time I saw her she did not appear to be greatly emaciated, neither was there roughness or deadness of the skin. During the preceding summer she was reported to have been similarly affected as I saw her during the last three weeks of her life; that is, she vomited often, was œdematous, had profuse diarrhea, was profoundly weak; also, had the bronzy skin. From this condition she rallied, and greatly improved in health, under a tonic course of treatment, during the autumn, the discoloration also disappearing.

During attendance on her the temperature was always subnormal, except one time there was slight fever.

The period of active progress in her disease seemed, from the history of the case, to have been about two years and a half. She attributed it to hard work, believing, also, it was hastened last fall by hardship, and anxiety, and excitement.

It appears probable, however, the cachexia, or diathesis, if we may denominate it either, antedated the time she supposed. During girlhood, even, she was prone to vomiting without apparent cause, particularly from her twelfth year of life.

During the courtship of her future husband, near her twenty-fifth year, at times when he appointed taking her buggy riding she invariably omitted the preceding meal to avoid the mortification of vomiting in the vehicle in the presence of her lover. Riding always excited vomiting. Disturbed digestion and diarrhea were likewise marked features of her life.

The mother of this lady, who died thirty years ago, is reported to have had the same symptoms here mentioned in the daughter, even to the bronzing of the skin. In the post-mortem examination all structures and organs showed intense paleness; anæmia. Nothing abnormal was discovered in the heart or lungs except general adhesion of right pleural surfaces of old duration. Also in the left pleural cavity there was probably a half pint of fluid of bright orange color. The liver was probably one-third larger than natural; the margin of left lobe reaching to left parietes. Gall bladder was empty. Nothing concerning the intestines, except in a few places, especially the

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ascending colon, there were dark or black colored patches. Kidneys showed nothing remarkable. The supra-renal capsules were about of normal size and shape, but were very soft, and seemed to have degenerated into a granular material of a dark or blackish brown color. There was no pussy liquefaction or calcareous degeneration or deposit. There were no adhesions of these bodies to other parts or organs. They were probably in the third stage of degeneration as periods are assumed to occur. In the abdominal cavity there was a considerable amount, perhaps two quarts, of a deep orange colored fluid. The fatty tissues were everywhere of this deep orange stain; all organs were very flabby, but not softened.

It has been my fortune, also, to have in charge for about six weeks, this spring, a man, age 57, afflicted with the same disease just reviewed, though no post-mortem examination was secured to confirm the diagnosis. His history and symptoms differed in few particulars from the first case. For the past fifteen years he often had attacks of debility and prostration, often accompanied with inability to retain food on the stomach, either vomiting or purging whatever was taken into the stomach. For the past ten years his hue of skin was dingy or smoky. During the three years past the skin assumed the characteristic bronze at the times of vomiting and diarrhea. For five months preceding death he was confined to the house; the last six weeks of the time to his bed. During the last period asthenia was profound; breathing was slow and seemed a burdensome operation; heart very feeble; pulse disappearing at wrists two days before death. During life repeated examinations failed to detect the least signs of difficulty in any organ. His only complaint was of being "so weak."

Admitting these cases to have been ones of Addison's disease, which I believe all the physicians claim who saw them before and after death, they did not present features very different from the numerous recorded cases, while enlargement of the spleen and some other organs is usual, that of the liver is rare. Greater changes in the capsules might have been expected in the way of inflammatory adhesions or extensive degeneration. However, if these changes were not so marked, were they not sufficient to work disaster?

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A most interesting phenomenon in these cases, and one not generally observed, was the rapid appearance and disappearance of coloring of the skin.

Thirty-five years ago, Dr. Addison announced to an English medical society his discovery of the disease since bearing his name. Five years later, in the year 1854, he published his treatise on "The Local and Constitutional Effects of Disease of the Supra-renal Capsules." Following this announcement and treatise there was for years a spirit of incredulity and argument as to the very existence of such a disease. Many maintained then as some do now, that such a condition is a mere variety or phase of some other disease. It seems now, however, to be a well established fact that we have such a distinct disease. Investigation and reason are now trying to determine its etyology and pathology. As to its successful treatment there is as yet general despair.

In consulting such authorities as can be found on this subject, we find near as many opinions as to its causes and nature as there are writers. So it remains to compare and discuss such theories as seem most probable.

Selecting three late and well known writers, we have the embodiment of all and the latest that is known of the subject. These three are mentioned because they have somewhat different views as to the nature of the disease, and the argument of each is plausible.

One pronounces it a cachexia caused or accompanied by degenerative changes in the capsules; also, that there is found one or more of the three following conditions in the disease: tuberculosis, chronic interstitial inflammation, fiber caseous metamorphosis. As he finds over 80 per cent. of what he considers tuberculosis existing in the capsules or in other organs in these cases, he grounds his conclusions on these facts, but as the physiology of the supra-renal bodies is not well determined, he admits that the pathogemesis is not well settled.

Another maintains that it is constantly and intimately connected with one or two other invariable conditions: anæmia or leucocythemia. While we have a per cent. of tuberculous developments in this disease, as well as scrofulous symptoms occasionally, the only constant vice is leucocythemia. This

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latter disease manifests itself in various ways, and Addison's Disease is probably a result of other diseases, or of the causes that produce blood impoverishment.

The third authority believes and clearly states, with more positiveness than Addison himself, that the disease of the capsules is a primary one, constant in its nature, originating in bodies themselves. While Addison's observations have proved very exact, and while he invariably found these capsules diseased or destroyed, he did not regard this fact as a necessary element in the disease, but rather as a uniform result of it. He hazarded the opinion that the disease was a diathesis, and might be produced by cancer, or by other diseased conditions; but he never once confirmed the opinion by really finding cancer associated with it.

In this affection of the suprarenal bodies there is rarely made a correct or an early diagnosis. The symptoms are usually of an unsatisfactory kind, and are confused with those of anæmia, or of leucocythemia, or chlorosis, or indigestion, or entero-colitis, or with some other obscure derangement that leads to debility and impoverishment.

The rarity of the disease in practice renders its distinguishing features unfamiliar. As the bronzing of the skin does not occur till the latter stages of the disease, when the capsules are destroyed, and the case necessarily rendered hopeless, and as the real nature of the case is not satisfactorily determined till this discoloration of the skin occurs, so treatment is of little profit. If treatment would avail, an early recognition of the disease must be made and measures taken, for bronzing of the skin means destruction of the capsules, and destruction of the capsules means death almost as surely as if the liver or the kidneys were removed from the body. To early recognize the disease it must be borne in mind that among the earliest and most constant symptoms, in connection with others, is marked asthenia, out of all proportion to the apparent condition of the patient in other respects.

While the opportunity for the examination of the supra-renal capsules early in the disease is rare, different conditions or stages have been noted that warrant us in concluding that the

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disease runs a regular course. It seems well determined that the disease and destruction of these bodies is a result of some inflammatory condition; or is accompanied by inflammatory process. It has been determined that early in this disease these bodies are two or three times larger than the normal size; later they diminish; later still they are again near their normal size, or even less.

Early in the affection these bodies are converted into an albuminous material or an inflammatory lymph. Later this product degenerates into a cheesy material of an orange color, destroying either all or a part of the bodies. In a per cent. of these cases a liquefaction of this material occurs, so if the bodies be cut through they seem to be pussy in character. When the liquid portion of this matter has undergone absorption, there result calcareous deposits of the inorganic portion. These chalky deposits are often mistaken for tubercular products. The albuminous material and its subsequent softening or cheesy degeneration are as often mistaken for scrofulous products.

While post-mortem examinations in these cases have revealed various pathological conditions, among them occasionally a real tubercular disease of the lungs or of other organs, this condition of various organs has been found, namely: softening or calcification of previous albuminous products of inflammatory origin. These conditions have been often misjudged for real tuberculous degeneration, or for scrofulous products.

This is a differential point between scrofulous products and the degenerated material of diseased suprarenal capsules; in the first there are no specific peculiarities; in the second there is a degeneration of a prior albuminous product. Hence, we affirm that Addison's Disease is neither tuberculous nor scrofulous, not leucocythæmic, but a distinct disease of the suprarenal capsules themselves. Other pathological conditions found associated with it are either secondary or are coincidences.

Formerly the suprarenal capsules were classified with the thymus gland and thyroid body as remnants of fœtal life. It is now considered that they develop from birth, and are important or vital organs. It is not determined, however, what their

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function is. In the living animal compression of these bodies gives great pain and shock. Mutilation or removal of them, or even of one, is surely followed by death of the animal. Neither is their minute structure understood or ageed upon by anatomists. In some respects they resemble glandular organs. By some they are regarded as ganglia of the sympathetic system. At least they are intimately and abundantly connected with the nervous system, especially with the sympathetic, i. e., the semi-lunar ganglia and solar plexus. They also receive branches from the pneumogastric and phrenic nerves. Some investigators affirm that they contain true nerve cells and fibres. Is it strange that disease and destruction of these bodies so related to the nervous system, if not a part of it, should cause such profound symptoms and death, while even a slight disease of the uterus, or an ovary, that is scantily connected with the nervous system in comparison to these renal bodies, causes disturbances of the entire system as a mountain in labor? There is formed in these bodies, and it is found in the suprarenal veins, a peculiar substance that gives peculiar reactions with iron and iodine. It is thought possibly that it is the action of this substance on the iron in the blood that produces the peculiar coloring of the skin. Others think it most probable that as these bodies degenerate into an orange colored substance that the absorption of this matter by the blood produces the discoloration.

The causes of Addison's Disease are unknown, or at least obscure. Not more so, however, than Bright's Disease of the kidneys. It is not unlikely that among the causes may be cold, exposure, strains or injuries of the back, or venereal abuses, or to overwork or depression. As to treatment, there is nothing known of sufficient service worth mention except what general principles might suggest. A recent writer claims good results from the internal use of chloroform and glycerine.

DISCUSSION.

Dr. J. Z. Powell—Mr. Chairman, I had one case of the disease, generally termed Addison's Disease, that I would like to

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relate. It was a woman about thirty years of age, a very fleshy woman. I knew her from infancy, and she was regarded a very stout, hearty, robust girl, and continued so up to one year prior to death. She had no disease and never had any serious sickness during her entire life, until the last year, when she began to run down and became greatly emaciated, although quite fleshy when she died. The general symptoms were unusual vomiting, weakness and general debility of the entire system. On the post-mortem, upon minute examination, we found both lungs seriously involved and diseased. There was a granular condition resembling tuberculosis more than anything else, and upon microscopic examination it showed peculiar granulated cells. The liver was somewhat enlarged, but without serious disease; the tissues generally were flabby; the stomach seemed to be normal and no serious disease there; there was some in the bowels.

The real nature and character of this disease is but little known, but we came to the conclusion in the post-mortem that it was of a tubercular character, but of the exact nature of the affliction we would not venture an opinion.

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On the Treatment of Cholera Infantum.

BY W. BYFORD RYAN, M. D., WILLOW BRANCH, IND.

If there be any one theme, among the hundreds that perplex us, which stands pre eminent in importance, that theme is the treatment of cholera infantum.

Yearly this perilous disorder almost decimates our infantile population, hundreds of homes contributing of their priceless jewels to heap high the ghastly sacrifice to our ignorance and helplessness, while the mortality of every clime suited to its development bears gloomy witness to the inefficiency of our means for its cure.

Of the seventeen hundred children, under five years of age, who died of miasmatic diseases, cholera infantum claimed thirty per centum in this State in the year 1883, and in the same period caused eleven per cent. of the total deaths from disease among children under five years of age.

In the city of St. Louis, last year, 9.2 per cent. of the total mortality from disease was due to cholera infantum. Of deaths, under five years of age, from all diseases, 23.32 per cent., and from zymotic diseases 40 per cent., were from this cause.

Trousseau, the prince of clinicians, after giving what he regarded as the very best treatment, says: "You must, however, remember that the cases in which recovery takes place are few in number, death being the usual termination of infantile cholera." Dr. Francis Delafield, of New York, declares that treatment of any kind is very unsatisfactory, and insists that the child be given a change of climate if possible, the earlier the better, and this though the prostration be so great that the patient is apparently moribund.

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In great cities where people are overcrowded, where heaps of festering filth are constantly accumulating, and where a close, hot, and vitiated atmosphere enervates both old and young, the mortality from this disease is simply terrible. Nor are its ravages confined to the poor, the filthy, and the ill-fed denizens of squalid tenement houses; but the children of luxury, in palatial homes, on fashionable avenues, and the rollicking roseate inhabitants of salubrious farming districts, yield reluctant tribute to this destroyer of the blooming promise of the harvest of our hopes.

It is useless, however, to dwell on the fatality of this affection and the inadequacy of any generally known method of treatment. All acknowledge these, from the greatest to the least in the profession.

It is not my purpose to discuss the many different theories of the origin of cholera infantum, but rather to call attention to what is apparent to all observers, and, if possible, to draw from my premises, a few plain, common-sense conclusions.

You will pardon a brief iteration of the physical condition of a cholera infantum patient, for, though too familiar to you, it will assist in the development of the theory I desire to present for your consideration.

There is no prodromic period, unless we so regard a laxity of the bowels, which is not usually alarming to the family. The invasion is abrupt. The physiognomy of the child quickly undergoes startling, alarming change. In one instance in my own knowledge the change was so rapid and so complete that last summer a father failed to recognize, and could scarcely be convinced that the little sufferer was the babe he left but slightly unwell twelve hours before. The eyes are sunken, and a bluish line is clearly seen beneath the lower lids. The child cries as if it were being suffocated. The pitch of voice is sharper and higher than usual, resembling the hydrocephalic cry. The skin is cold and almost destitute of tonicity; on being pinched up the fold returns slowly to the normal position. Vomiting is an urgent and distressing symptom. Almost every thing swallowed is ejected within a few moments. In addition to the ingesta, which come up unchanged, the vomited matter

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is serous fluid and bile. The dejecta, which in the beginning were lienteric, change to a greenish scum, in which floats shreds and flakes of a green substance generally adhering to the diapers; or the discharge may be of a yellow color, resembling the yolk of egg; but they are *always absolutely serous* and very frequent. As the disease progresses the child falls into a stupor, and lies with the eyes partly closed; there is insatiable thirst throughout, all liquids being swallowed with avidity, regardless of their taste. The abdomen is flaccid and sunken; the skin is dry and of a leaden color. In a word, *the entire peripheral circulation, especially that of the capillary system, is almost nil.*

The causes which lead to this deplorable state are, in my opinion—

I. *The enervating influence of excessive heat, producing,* as in Asiatic cholera, *spasm of the peripheral arterioles.*

II. *Hyperemia of the gastro-intestinal apparatus,* produced (*a*) by chilly nights following excessively warm days, and (*b*) by the reflux of blood from the emptying of the surface capillaries.

III. The vulnerability of the gastro-intestinal viscera in the young generally, and especially in those whose digestive organs are enfeebled by premature weaning or by improper food.

Spasm of the arterioles, or, what amounts to the same, paralysis of the trophic nerves, produces peripheral anemia. The congestive influence of chilly nights added to the emptying of superficial vessels, favors engorgement of the internal vascular system. The atonic condition of the digestive organs, made more vulnerable by premature weaning or improper food, also invites the fugitive blood. *Atonic vessels long distended permit the rapid endosmosis of the serum of the blood.* Hence, vomiting; hence, diarrhea; hence, *serous* ejecta; hence, anemia; hence, excess of fibrin and solids in the blood; hence, coagulability of the blood; hence, *thrombi* and *emboli*; hence, the plugging of cerebral vessels; hence, death—if, indeed, death do not claim his victim previous to the formation and lodgment of a clot.

If this view of the causes and pathology of cholera infantum be correct, the rational treatment, in direct antagonism to the dictum of Hahnemann, and in full accord with its antipode, *con-*

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Geographical Pathology of Consumption.

BY G. W. M'CASKEY, A. M., M. D.,
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The deaths from consumption in the United States, in the year 1880, numbered 91,551, almost one-eighth the entire mortality from all causes. This pregnant fact seems to furnish at once an incentive and excuse for the following endeavor to ascertain what definite relation there is, if any such exists, between this disease and certain climatic conditions in the United States.

An obstacle is encountered at the very threshold of the inquiry in our defective system of registration. It must be admitted, in the first place, that many cases reported as consumption have no relation to that disease. It is also well known that many cases are not reported at all. The migratory character of a considerable body of the population—especially its westward flow—is also a disturbing element in a statistical study. And, finally, those regions, the climates of which have secured the reputation of being curative of consumption, have their death-rate from this disease greatly increased by the immigration of a large number of the rapidly fatal type of cases. The last named source of error can not be removed, as there are no available records of its extent. It is only found, however, in a small number of localities; and if it could be entirely removed the only effect, so far as the present study is concerned, would be to increase the force of the conclusions drawn. After recognizing its existence, therefore, it may safely be dismissed.

So far as the other sources of error are concerned, while their existence is to be deplored, they will not impair deduc-

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tions made from data which need only be comparatively correct. Indeed, for purposes of comparison the absolute death-rate is quite unnecessary. The death-rates of different localities might just as well be expressed in units, taking as an arbitrary standard either the highest or lowest death-rate found in any given locality, the mean death-rate between these two extremes, or the average of all. There is little doubt that the census report gives data which are at least relatively correct, and which can therefore be relied upon for the purposes of a comparative study. The area of the United States is too vast and complicated for detailed analysis within the intended scope of this paper. By a general survey, however, certain broad facts may be collated, and certain inferences drawn, which may not be without value.

A basis for comparison, at once practical and scientific, is readily formed by placing side by side (1), the mortality from consumption; (2), the mortality from all causes; and (3), the percentage of the former to the latter. These data will be ascertained for the United States, for groups of States, for individual States, and, in some instances, for parts of States. Notwithstanding the wide variations found in different parts of these extensive regions, each has its average of annual rainfall, of elevation, of mean annual temperature, and the like, which, taken together, or perhaps singly, are entirely characteristic of itself. These distinctions are broad enough to completely overshadow local anomalies, even if these did not, in accordance with a well recognized law, correct one another by mutual antagonisms.

With the exception of four States, (California, Florida, Louisiana and Pennsylvania) and three Territories, (Arizona, Nevada and Montana) the death-rate from all causes was larger in 1880 than in 1870. The result of this increase upon the part of the individual States is to raise the death-rate of the United States from 13.3 per 1,000 in 1870 to 15.1 in 1880, an increase of 13½ per cent. Curiously contrasting with this fact, the death-rate from consumption either shows no change or a slight increase in all except fifteen of the States and Territories. The average for the United States, which shows no change whatever, remaining 1.8 per 1,000 for each year, only illustrates and con-

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firms the remark that the local variations neutralize one another, thus making no change in the general result.

The following table has been compiled from the census reports for 1870 and 1880:

TABLE I.

Showing Death-rate (1) *from all causes,* (2) *from Consumption, and* (3) *percentage of latter to former.*

	Deaths per 1,000 of Population.		Deaths from Consumption per 1,000 of Population.		Percentage of Deaths from Consumption to all Deaths.	
	1870.	1880.	1870.	1880.	1870.	1880.
UNITED STATES	13.3	15.1	1.8	1.8	14.1	12.1
Alabama	10.8	14.2	.76	1.4	7.0	9.0
Arizona	26.1	7.2	0.1	.4	.4	6.9
Arkansas	12.6	18.4	.9	1.2	7.0	6.4
California	16.1	13.4	2.2	2.2	13.8	15.6
Colorado	9.4	13.1	0.8	1.1	8.5	8.2
Connecticut	12.6	14.7	2.3	2.2	17.9	15.2
Dakota	7.1	9.6	.9	.8	12.8	8 9
Delaware	12.5	15.1	2.4	2.4	18.9	11.1
District of Columbia	15.3	24.5	3.4	4.4	21.9	19.0
Florida	12.1	11.7	0.7	1.0	5.7	8.0
Georgia	11.5	13.9	0.7	1.1	6.4	8.0
Idaho	3.3	9.1	0.3	0.7	10.0	6.1
Illinois	13.3	14.5	1.4	1.5	10.8	13.3
Indiana	10.5	15.7	1.7	2.0	15.5	12.7
Iowa	8.1	11.9	1.1	1.2	13.7	9.9
Kansas	12.5	15.2	1.1	1.1	9.0	7.3
Kentucky	10.9	14.4	1.9	2.3	17.4	15.7
Louisiana	20.0	15 4	1.9	1.6	9.7	10.7
Maine	13.3	14.8	3.2	2.8	25.6	19.2
Maryland	12.4	18.1	2.1	2.5	17.2	14.1
Massachusetts	17.7	18.5	3.5	2.9	19.9	15.7
Michigan	9.4	12.0	1.6	1.6	16.4	13.2
Minnesota	8.0	11.6	1.0	1.1	13.0	9.4
Mississippi	11.1	12.9	.8	1.1	7.6	8.2
Missouri	16.3	16.9	1.6	1.7	9.7	9.1
Montana	9.0	8.0	.8	.5	9.2	5.4
Nebraska	8 1	13.1	.7	.9	8.7	7.0
Nevada	14.5	11.7	.7	1.0	4.8	8.4
New Hampshire	13.5	16.1	3.0	2.5	22.2	15.7
New Jersey	11.7	16.3	2.0	2.3	17.2	14.2
New Mexico	12.8	20.3	.5	.4	3.8	2.5
New York	15.8	17.4	2.6	2.5	16.7	14.6
North Carolina	9.8	15.4	1.1	1.5	11.7	9.1
Ohio	11.1	13.3	2.0	1.9	17.7	13.9
Oregon	6.9	10.7	1.2	1.3	18.0	12.1
Pennsylvania	14.9	10.2	2.1	1.9	14.2	15.6
Rhode Island	12.6	17.0	2.5	2.4	20.1	14.7
South Carolina	10.5	15.8	.9	1.6	8.9	9.1
Tennessee	11.3	16.8	1.9	2.4	16.7	14.5
Texas	13.7	15.5	.8	1.0	5.9	6.6
Utah	10.3	16.7	.7	.5	7.1	2.9
Vermont	10,7	15.1	2.2	2.4	20.2	16.0
Virginia	12.4	16.3	1.7	2.0	13.8	12.1
Washington	9.3	10.5	1.5	1.3	15.7	13.2
West Virginia	9.1	11.9	1.6	1.6	17.6	13.1
Wisconsin	9.4	12.1	1.2	1.3	13.2	10.5
Wyoming	8.1	9.1	.4	.3	5.4	2.6

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The well-known prevalence of the disease in New England, and its rarity in the South Atlantic and Gulf coast States, becomes at once apparent. It is also observed that, with numerous undulation, it is somewhat evenly distributed over the remaining States east of the 95th meridian. In the vast region west of this meridian, comprising more than one-half the territory of the United States, and about one-fifteenth of its population, it is, with the exception of a portion of California (Texas is included in another division), even less prevalent than in the South Atlantic and Gulf coast States.

The division into groups indicated by the following table is intended to throw together adjacent States which have something in common regarding their consumption death-rate, with the view of studying some of their more important climatic conditions for the purpose above mentioned. The boundary line between these different regions, to be absolutely correct, would often, or perhaps generally, intersect the different border States. The difficulties in the way of securing statistical data for parts of States were so great, however, as to render such a division impracticable. The number of these groups, furthermore, could have been indefinitely increased, often comprising a few counties instead of several States. This could only have led to confusion, and been utterly barren of results.

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TABLE II.

Showing Death-rate (1) *from all causes,* (2) *from Consumption, and* (3) *percentage of latter to former in groups of States.**

	Deaths per 1,000 of Population from all Causes.		Deaths per 1,000 of Population from Consumption.		Percentage of Deaths from Consumption to Deaths from all Causes.	
	1870.	1880.	1870.	1880.	1870.	1870.
New England States	14.6	16.7	3.0	2.6	20.8	16.1
Middle States	14.9	16.2	2.4	2.2	15.8	13.8
South Atlantic and Gulf States	12.2	14.6	1.0	1.3	8.1	8.8
Interior and Lake States	11.5	14.6	1.6	1.8	14.2	12.0
States and Territories west of 95th Meridian, except Texas and California	10.8	13.8	0.9	1.0	8.5	7.1
California	16.1	13.4	2.2	2.2	13.8	15.6

Having marked out the different regions for individual study, and noted the high mortality from consumption in the New England and Middle States, and the low mortality in the South Atlantic and Gulf States, and the western half of the continent, it now remains to study the climatic conditions of each group in their bearings upon this disease.

Temperature—Temperature may first be considered, as one of the most prominent factors in that combination of conditions called "climate." The mean annual temperature will be taken as the standard of comparison. In making estimates of the mean annual temperature of a group of States, it should be constantly borne in mind, that they are only the averages of more or less widely diverging extremes. The same caution is necessary in considering the like estimates of annual rain-fall, and altitude which are to follow. As absolute measurements,

*The New England and Middle States were assigned positions as separate groups, partly because of their long recognized geographical unity, and partly because there were no apparent reasons for uniting the two groups or subdividing either. The third group includes the remaining States of the Atlantic and Gulf coast. The group of States lying wholly, or principally, east of the 95th meridian, *and not included in the first three groups*, have been designated the "Interior and Lake States." A fifth group comprises the remaining States and Territories, with the exception of California, which, on account of the very high death-rate of a portion of the State, is assigned a position as a distinct region by itself.

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they are not reliable; as comparative statements—and it is for purposes of comparison only that they are introduced—they are believed to be approximately correct. A glance at the isothermal, isohyetal, and hypsometric charts, especially the first two, will illustrate in a very forcible manner, the difficulties encountered. Taking the entire Atlantic and Gulf coast line, we find a very marked decrease in its consumption death-rate as the mean annual temperature rises. This is shown in a general way by the individual States, but more distinctly by comparing the groups into which these States have been divided for the purpose of this inquiry. Commencing with the New England States, we find a mean annual temperature of 40 to 48 degrees Fahr., with a consumption death-rate of 2.6 to 3.0 per thousand of the population, or 16.1 to 20.8 per cent. of all deaths. Passing down to the Middle States, we find that the mean annual temperature rises about four degrees—44 to 52 degrees Fahr.; the consumption death-rate falling to from 2.2 to 2.4 per thousand, or 13.8 to 15.8 per cent. of the deaths from all causes. This change is not due to any decrease in the general mortality, for this remains practically the same as in the New England States; being .3 greater in 1870, and .5 less in 1880. Still farther down (South Atlantic States), the mean annual temperature rises to from 60 to 76 degrees Fahr., and the consumption death-rate falls to from 1 to 1.3 per one thousand, or 8.1 to 8.8 per cent. of all deaths. Here again the decrease in the consumption death-rate is out of all proportion to the decrease in the general death-rate—the former being 41 and the latter 10 per cent. Southern Louisiana presents a notable departure from this average, by showing a very large mortality from consumption.

On the contrary, when we compare the Interior and Lake States as far west as Kansas and Nebraska in different latitudes under the same meridian, we find a general increase in the consumption death-rate as we pass from North to South. Taking the States traversed by the 85th meridian, the death-rates per one thousand of the population for 1880, were as follows: Michigan, 1.6; Indiana, 2.0; (Ohio by its side, 1.9); Kentucky, 2.3; and Tennessee, 2.5. In 1870, however, no differ-

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ence was reported between Kentucky and Tennessee. Again, taking the States traversed by the 94th meridian, the death-rates are as follows: Minnesota, 1.1; Iowa, 1.2; Missouri, 1.7; but here the rise ceases, and Arkansas falls to 1.2, while its mean annual temperature is about 20 degrees Fahr. higher than that of Minnesota. On the 100th meridian it is as follows: Dakota, .8; Nebraska, .9; and Kansas, 1.1, thus showing a slight, gradual increase with the rise of temperature. But the relative positions of Dakota and Nebraska in the scale, were reversed in 1870; while Arizona and New Mexico, with about the same temperature as Tennessee, have about the lowest death-rate in the United States; while Tennessee has nearly the highest. Southern California, with a mean annual temperature considerably higher than the northern portion of the State, is almost exempt from the disease, while it is very prevalent in the latter portion of the State. Oregon and Washington Territory, with a temperature more than 20 degrees lower than that of Arizona, have a mortality from consumption more than three times as great.

What, then, are the inferences to be drawn from these facts, regarding the etiological relation of different mean annual temperatures to consumption as indicated by its mortality? From the Atlantic coast alone we are justified in concluding that consumption diminishes almost *pari passu*, with a rise of temperature. This is rather the statement of a fact than an inference. But, on the other hand, that temperature alone is either unimportant or entirely masked by other conditions, is abundantly shown. The same isothermal belt, for instance, traverses Maine and Minnesota; the consumption death-rate in the latter being about one-third that of the former. That the difference is not dependent upon the general healthfulness of Minnesota is conclusively proven by the fact that its death-rate from all causes is three-fourths that of Maine. The question of temperature is almost inextricably complicated with other atmospheric conditions of scarcely less importance. But in the face of the foregoing facts, the view that low temperatures protect from phthisis, while high temperatures favor its development, is clearly untenable. The facts obtained both from the Atlantic

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and Pacific coasts clearly point in exactly the opposite direction; and it ought certainly to be anticipated that repeated congestions, which low temperatures so commonly produce, will aggravate the disease, and make it run a much more rapid course. Not only so, but in many instances the disease apparently has its origin in such a congestion of the bronchial mucous membrane, called a "cold." Whether a specific poison is essential or not, without the "cold" the consumption would probably not have developed.

The view that a warm climate is the one in which consumptive patients will thrive the best, and those not consumptive be least likely to become so, seems equally, if not more rational upon *a priori* grounds. It is, moreover, quite as well sustained by a study of the facts already presented. It must be confessed, however, that neither view can be established by evidence derived from this source. So conflicting is this evidence, that one feels little surprise at the therapeutical antithesis enunciated in a recent monograph, viz.: that extreme heat and cold are perhaps equally efficacious in cutting short the disease.*

But for the consumptive patient seeking a climate where he may live the longest and live the best, it would seem wiser to go where the vessels of the skin were least liable to be constricted by external cold, with the necessary sequence of determination of blood to internal organs. One such occurrence may produce irreparable, and perhaps rapidly fatal mischief. Fortunately the false and pernicious doctrine that consumption is incurable has been completely overthrown. The question is, therefore, not always between a rapid and a lingering death, but often between death and partial or complete recovery, which may be either temporary or permanent, the very possibility of which makes the subject of treatment so much the more grave and important.

The frequency and extent of sudden changes of temperature will be passed without discussion, because of insufficient data, and the fear of extending too far the limits of this paper.

* "Consumption as a Contagious Disease:" D. H. Cullimore, F. R. C. S.

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ALTITUDE.

The prevalence of consumption at different altitudes in the United States, was then discussed. The fact that all grades of mortality from consumption, from the highest to the lowest, were found on the level line of the Atlantic coast; that the mortality in the region comprising Colorado, Wyoming, New Mexico and Arizona, at an elevation of four to eight thousand feet above the level of the sea, had about the same mortality as some portions of the Gulf States, which were less than one hundred feet above sea level, together with other facts of its geographical distribution, seem to warrant the assertion that there is no essential relation between consumption and different altitudes. The statement of numerous authors that an elevation of four thousand feet confers complete immunity, is conclusively shown to be incorrect, by the single fact that more than eight per cent. of all deaths in Cororado are due to consumption; the entire State being more than four thousand feet high. That consumption is rare in most elevated regions is a fact which can not be denied. Nor is it desired to underrate the therapeutical value of the rarified atmosphere of elevated regions in the treatment of a certain class of cases. But it is a manifest error to say that the highest altitudes ordinarily inhabited confer an absolute immunity, or that regions near sea level are essentially favorable to its development.

The reason why phthisis is rare in high altitudes can no more be explained than its rarity in those parts of Florida almost at sea level. Neimeyer, distinctly and frankly says, that its rarity in elevated regions is "without apparent reason." Ruehl says, that it has not been determined whether it is due to low barometric pressure, but that it may be due to purity of air.

HYGROMETRIC CONDITIONS.

The amount of moisture in the air was estimated comparatively by the annual rainfall. This standard, while not always correct, was considered sufficiently so for purposes of comparison.

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It was found that there was no constant relation between certain degrees of atmospheric moisture and the mortality from consumption. The two regions when the mortality is less than in any other part of the United States, (Gulf States and Colorado regions) have respectively the highest and the lowest rainfall, being as high as eighty inches in the former and as low as eight in the latter.

The effect of moisture appears very different according as it is associated with a high or low temperature. With a high temperature it is rather favorable than otherwise, dryness promoting irritation of respiratory mucous membrane (Jaccoud.) With low temperature it is prejudicial, as illustrated in New England.

COAST INFLUENCES.

As all grades of mortality from consumption were found on the sea coast, from the infected regions of New England to the health resorts of Florida and Southern California, it was concluded that there could not be, as stated by Professor Flint, a uniformly greater prevalence of consumption on the sea coast.

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CONSUMPTION IN INDIANA.

BY C. S. BOND, M. D., RICHMOND.

It is believed by many of the most able thinkers and writers in the State that this disease is bearing a greater and increasing ratio to the total mortality, and that this ratio is not in proportion to such ratios in many other States. I speak of the experience of individuals in this connection instead of statistics, because no definite knowledge can be obtained from either State or National mortality tables. The census of 1880 gives 12 per cent. as the rate of death from this cause throughout the United States, while Dr. Billings, of the United States Army, from very careful estimates from other data, concludes that the rate should be from 17 to 18 per cent., and gives 18.2 as the average. Indiana in the census report of 1880 had 3,943 deaths from consumption, whereas the State Board of Health, in 1883, reports 1,773 deaths from this cause. Wayne county is accorded in this report the credit of being one of the best reported counties in the State, and gives 14.8 per cent. mortality from consumption, but through her health officer finds that almost one-half the total number of deaths from all causes, outside of large towns, have not been reported. The city of Richmond is well reported, and gives an average annual mortality of about 18 per cent. from consumption. In the census report of 1880 we find that throughout the State of Indiana 4,964 cases died from diseases of the respiratory system, which were not in any way connected with the 3,943 cases of consumption. In 1883 the State Board reports 173 cases of abscess, congestion, hepatization, œdema and ulceration of the lungs, which were in no wise referred to the 1,773 cases of consumption. It

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will be seen by so slight a glance at the statistics of the State and Nation that no conclusion can be drawn that will be of advantage to one seeking for a true numerical foundation in regard to this disease. In defense of this statement still further, it is safe to say that in this State, outside of its large towns, fully one-half of all cases of deaths from all causes have not been reported to the State Board, as I have shown out of 3,943 cases of consumption, according to the census of 1880, 2,170 were not reported in 1883 by the State Board of Health. Again, if we take into account that one-third of the practitioners of the State are irregulars, and one-third of the remaining regular doctors are ignorant of the subject of medicine, we need not wonder that our statistics are of so little value, and that cases of consumption are found under the head of nervous debility, senile debility, congestion, œdema and ulceration of the lungs.

From the city Boards of Health we find that New York has 14.09 per cent. mortality from consumption; Boston, 15.17; Philadelphia, 14.28; Baltimore, 14.55. It is fair to conclude that these figures are nearly correct for these places; since, by city laws, all deaths are required to be reported to city health officers before burial permits can be issued. These places are mentioned as standards of comparison, since they are large cities on the sea coast, and therefore, as will be shown further on, are exposed to two prominent factors in the production of this disease. The large cities and towns of this State can make no such favorable showing, the per cents ranging from 15 to 20 of the total mortality. That this rate has increased in the State within the last fifty years we have ample proof, both from the carefully prepared tables in the large cities and towns, and the facts obtained from professional experience over this term of years.

In clearing away the forests we have procured a more rapid evaporation over large areas otherwise protected from the rays of the sun, and thus, together with the drainage, have lessened the amount of moist and swampy land in the State. Especially is this true in the higher portions of Indiana. This, according to the law of Bowditch, should have lessened the mortality

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from consumption. The conditions, however, which counteract this result are to be found in other, but equally potent, causes, and are immediately concerned with our geographical position, elevation and natural drainage system. Situated in the temperate zone, we are subjected to the rapid changes in temperature common to this latitude elsewhere, but, in addition, have exposed ourselves to still greater variations in temperature by destroying our defense against the northwest winds that sweep over the great lakes southward across our State, thus changing the seasons, and giving us still greater variations in moisture and temperature.

While the State is comparatively high with regard to its sea-level, it lies but a little above an hundred feet, on the average, higher than lake Michigan, and is infested throughout the central and western portions by large areas of swampy land. The great rain fall, and numerous streams that flow sluggishly to the sea, furnish our atmosphere with abundant moisture. Increasing population, and especially that portion which goes to augment the size of our cities and towns, together with bad sanitary surroundings, still further add to the mortality from consumption. This is true not only of our cities and towns, but also of all thickly populated areas under environments that must necessarily follow. Having now looked at the State and found it moist, low and swampy in many parts, pervaded by cold, moist winds, it is left for us to inquire what all these facts have to do with consumption.

Moisture in the soil is continually passing into the atmosphere by evaporation, and thereby reducing the temperature of that region. The atmosphere thus deprived of its heat may remain quiet or be blown into adjacent warmer localities, thus causing a sudden fall of temperature. Such areas of land, therefore, unobstructed by forests bordering upon and penetrated by large bodies of water must, present quite varying degrees of temperature from this cause alone. Again, a cold, moist strata of air on the earth's surface condenses the moisture in warmer currents, and thus adds to its humidity. That such changes and such conditions of soil have a marked effect upon the health of a people every-day experience teaches, and

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no more striking example can be noticed than the mortality from consumption in such regions. Sudden chilling of parts or all of the body produces congestion of the mucous membranes and causes slight inflammatory processes to take place in the lungs and air passages, thus laying in the predisposed the foundation for more serious lung trouble. It has been observed by many eminent authorities, foremost among whom is Dr. Pettenkofer, that there is a constant relation existing between damp soil and phthisis. Doctors Bowditch, of Boston, and Buchanan, of England, give this relation as one of cause and effect, and cite several places in England where the subsoil has been drained as proof. In these places the mortality was lessened nearly fifty per cent. after draining. In other places the soil was not drained, but other sanitary conditions were greatly improved, still consumption destroyed its annual number of victims. Aside, then, from organic decomposition with which moisture plays so important a part, it may be considered an active agent in the production of consumption, or of the causes which lead to the disease.

It may be regarded as a fact that elevated position is in opposition to phthisis; especially is this true after we have passed beyond 1,800 or 2,000 feet above the sea. Phthisis is rare on the Swiss mountains and plateaux of Abyssinia and Persia, and in our country on the high table lands and slopes of the Cordilleras. It is claimed by Dr. Charles Denison, in his report to the International Medical Congress at Philadelphia, on "The Influence of High Altitudes upon the Progress of Phthisis," that the mortality from consumption rapidly decreases as we pass from the sea or large bodies of water to higher altitudes, and "the argument presented is, that if twenty to thirty per cent. of all deaths occurring on the coast and borders of rivers are from consumption which originated there,—as on the fortieth parallel in the United States—ten to twenty per cent. on higher ground, under 1,000 feet; five to ten per cent. from that height to 2,000 feet; two to five per cent. from that height to 4,000 feet; one to two per cent. from that to 6,000 feet; and seldom a case above that point, then the proof is conclusive enough in favor of high altitudes as a resort for consumptives."

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This exemption may be due to a dryer, purer atmosphere, or it may be the result of the lessened atmospheric pressure, or again it may be the result of a lower grade of organic decomposition owing to a reduction in temperature on elevated localities.

It is claimed that in cold climates where the temperature is nearly uniform, both for summer and winter, that phthisis is not so prevalent as in the temperate and torrid zones, and that the Esquimaux enjoy partial immunity from this form of disease, but so little is known concerning the mortality of the people of the frigid zone, that I am not able to affirm this statement.

Increase of population as found in cities with the bad sanitary surroundings it engenders, is the greatest factor concerned in the increased death rate from this cause, all other environments being equal. Amsterdam reports 171 deaths to 100 births; London, 125 to 100 births; Berlin, 131 to 100 births. This inequality in the normal relation existing between births and deaths, together with the fact that consumption claims a large per cent. of the total mortality from all causes, shows a balance in favor of the rural districts, of from 20 to 25 per cent. Doctor Frank Donaldson, of Baltimore, in a late paper read before the American Climatological Association, on "City Air and City Life Injurious to Consumptives," concludes from these tables and others from the United States, that the mortality of great cities from phthisis is two and a-half times larger than that in the country. Our city population is relatively great and is constantly increasing, and the ratio existing between the number of city and country people is continually growing smaller. Even now the town population of many of the counties equals to or exceeds that of the rural districts. I shall now stop to inquire what role the "bacillus tuberculosis" plays among the causes mentioned, or whether it be the only primary cause of consumption, and all other supposed causes but predisposing factors. Until Doctor Koch announced his discoveries in regard to his bacillus, scientists were content with the theories given above, but since this date a great revolution of ideas has taken place, and we are again in

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doubt. What this restless season of anxious inquiry may develop no one can foresee, but at present no conclusive proof has been presented in favor of the new theory that should be allowed the place of the old views. At first you will remember that this bacillus was considered the primary cause of consumption, and this claim gained in favor when the experiments of inoculating animals produced a disease very similar to, if not quite like tuberculosis. Other experiments afterwards seemed to show that the media in which the bacillus was found produced the disease. Again, it has been shown that these bacilli are very constantly found in bodies not known to be thus affected. It is very generally agreed that no healthy cell can be injured by this low form of life, and therefore a predisposition, diathesis, hereditary influence, or other devitalizing force or forces must be supposed in aid of the hypothesis. It would seem that any influence or conditions which had power enough to begin a retrograde change in the cells of the body, or hold their vitality in suspense at a certain stage of their development, would have force sufficient to continue the action without supposing a weaker agent at a particular period of these changes. Drugs which have been very destructive to bacilli outside of the body have proven of little, if any, value in the treatment of this disease.

No less eminent authority than Beale claims that these minute bodies are present in the broken down tissues, because this tissue attracts them, and furnishes them a nidus, in which and by which to live. In the recent "inaugural address" before the New York Academy of Medicine, Doctor Jacobi styles the present mental status of the medical profession as one of bacteriomania, since we have allowed a single series of discoveries to lay claim to having changed the aspect of pathology at one stroke, and to solve all problems. It is asserted, and the greater part of the profession believes, that that which is affirmed is true. Until further light is given us from some master of the subject, who is able to demonstrate his proposition, the whole matter must remain in its present chaotic state.

What now shall we do with our annual four thousand consumptives in this State? Shall we keep them at home in large

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cities or country, and give them abundantly of drugs, or shall we send them to other more healthy climates? If kept within our borders, the environments of the country with proper elevation and relief from streams or other large bodies of water, together with good hygienic surroundings, and a small quantity of well chosen drugs, would be the best condition the State can afford to either check consumption when once begun, or protect the patient from the initial steps of the disease. Under these conditions it is estimated that ten per cent. of the mortality will be from this cause. If we send them out of the State, where shall we send them? This subject, as many others in medicine have been, is controlled by fashion, and the prevailing fashion of Indiana is to look to Florida, California, or Colorado as health resorts for cases with this disease. According to the census of 1880, Florida has 8 per cent. mortality from this cause, Colorado 13 per cent., California 15 of the total mortality from all causes. So great is the influence on these figures of the annual influx of consumptive patients into these States that nothing can be learned from them, and it is time that these resorts were investigated by competent doctors in these States, so that true rates might be obtained from them, aside from their transient population. It would seem from the laws before referred to that Colorado, with its high mountain slopes, dry air, and comparatively equal temperature should furnish a very suitable resort for consumptives; however this be, time and more accurate statistics will prove. In the meantime let us improve our State as much as sanitary powers will permit, and conform to the prevailing fashion.

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The Infectious Nature of Tuberculosis.

BY WALKER SCHELL, M. D., SPENCER.

Tuberculosis is well understood to be a disease characterized by the development of nodules (tuberculi). These nodules are non-vascular, cellular, translucent, of limited size, and developed in connective tissue. The anatomical elements of a tubercle are accidental. The differences in cellular construction of tubercle all point to the fact that the histological elements are conditioned upon locality (as fibrous organizations in the testicle). Frequently they are made up almost wholly of nucleated round cells. These round cells are developed out of white blood-cells, and play the principal rôle in the formation of the tuberculum, according to Ziegler. Giant cells are frequently found in the older central portion of the tubercle. Schüppel claimed that these cells were characteristic of tubercle. We now know that they are found in various forms of granulation tissue. It is not always easy to distinguish a giant cell from an epithelial or endothelial cell. All members of this Society who have had much practical experience with the microscope know this to be true. The difficulty is greater in sections from the liver, or where the tubercle is in relation to the wall of a blood or lymph vessel. Giant cells are rather more numerous in tubercle nodules than other forms of granulations. This may be due to the low vitality of these granulations. The deficient blood supply brings about its early caseation, fatty metamorphosis, or necrobiosis. These changes are doubtless brought about by a partial digestion of albuminates, which occurs at a temperature of 37° (Celsus). Virchow classified these nodules among the tumors. He called them granulation tumors. Klebs termed them infec-

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tious tumors, and Ziegler infectious granulation tumors. Experiment has long since settled the fact that tuberculosis can be produced by inoculation. These experiments have been performed by Klebs, Cohnheim, and many others. Every one familiar with the post-mortem appearances of this disease has observed the distribution of miliary tubercles around an old cheesy deposit in the apex of the lung. I have several times observed infection of the entire organism from a caseous lymph gland. All surgeons have had occasion to regret failure to remove such glands. When the deposit in the apex of the lung is limited, and the process still distinctly local, a surgical operation might be undertaken with a reasonable prospect of preventing general infection. Such operations do not lie far in the future. Bollinger, of Munich, has shown that the pearl disease of cattle is identical with tuberculosis. Under his instruction in the pathological laboratory, I prepared sections showing the presence of bacilli tuberculosis in the pearl nodules of cattle. The milk of animals so diseased is capable of infecting those who use it. The sale of such milk should be prohibited by law, enforced by the inspection of health officers.

Cohnheim, in his earlier experiments, claimed that he was able to produce tuberculosis by inoculation with other substances than tuberculous material, as cheese, old flesh, leather, etc. That tubercles were found in many animals thus experimented upon is no proof of direct causation. Where the vital powers of animals are thus deteriorated they are more easily infected. I have been informed that many of these animals were kept in bad hygienic surroundings. Villeman long ago performed his vaccination experiments, and hundreds of experimenters have followed in the path of his demonstrations. Tappenier proved that dogs could be infected by the inhalation of tuberculous sputa. These experiments were performed before the specific cause of tuberculosis was known. It was not then known that tuberculosis was caused by a parasite. While I was an attendent at the hospital at Munich, Ziemssen caused a large number of observations to be made of the relation of bacilli to phthisis pulmonum. In every instance where bacilli were found the disease proved upon section to be tuberculosis,

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and when not found, after repeated examinations in suspicious cases, the disease proved to be other than tuberculosis. This was the sign most relied on in making a differential diagnosis. For the last two years I have placed great reliance upon the presence of bacilli as a diagnostic sign. Not only is it valuable in differential diagnosis, but I think I have discovered a relation to the rapidity of tubercle eruption. I have in several instances observed a marked relation of the symptoms to the number of bacilli discharged in the sputa. I have thus been able to predict with a certain degree of accuracy the varying condition of the patient from the microscopical examination of the sputa alone, where the specimens were sent to me from a distance. In one instance of acute tuberculosis, where diagnosis was exceedingly difficult by reason of acute pneumonia of the left apex, I found bacilli in great numbers, and the case made rapid progress, infection of the entire organism taking place, and death occuring from tubercular meningitis in three weeks after the initiatory chill.

Many individuals after long exposure escape infection, as happens in other infectious diseases. We who have cultivated bacteria have observed their dependence upon culture fluids. Bacteria which produce lactic acid from milk lose this power when cultivated in a solution of albuminates. Many other varieties of bacteria lose or acquire properties when cultivated in different solutions.

Heredity in consumption may consist in a favorable constitutional soil in which bacilli may multiply.

This may be the connection of what the old pathologists called scrofula with tuberculosis. Opportunities for infection and inoculation are so ample that it is not necessary to assume that tuberculosis is hereditary. Inoculation may take place from milk, the sputa, and the inhalation of air containing bacilli. It is probable that different forms of bacteria seek different tissues in which their life cycle and multiplication can be best accomplished, as the spirochæte Obermeieri in the blood, and cocci of diphtheria in the mucous membranes.

There has been a return of pathologists to the old doctrine of unity as expounded by Laënnec. Tuberculosis is now re-

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garded by them as an infectious disease, characterized by nodules, produced by the irritating agents, the specific bacilli. That these are the real cause of tuberculosis, is proved by vaccination from a pure culture. In fourteen days or three weeks tubercle nodules can be found containing bacilli. These results are certain and uniform.

These experiments have been performed in all parts of the civilized world with the same results. Jacobi, years ago, observed a dog which became tuberculous from eating the sputa of his master. Last winter I examined an applicant for pension who had a considerable deposit in the left pulmonary apex. His wife, then free from this disease, has since been infected, and died of phthisis. I know of a family where five children have died of consumption, and the infection can be traced from child to child, and yet the parents and grandparents are free from this disease. Age and lessened opportunity for infection probably account for their exemption.

Rapid bodily development and change predispose to infection. John W., aged thirteen, presents the following interesting history of his infection: About fifteen years ago the wife of the boy's step-father contracted consumption from nursing her husband's brother, the subject of that disease. Two years after the death of the brother the man lost his first child from tubercular disease, and three years later a second child from the same cause.

These children were infected by their mother. About four years after the death of the last child, the mother died of consumption. Anna, a third child, probably infected by her mother, died last February. John W. is a step-brother of this last child, and in no way related to her by blood. He was infected by Anna, his playmate. He virtually slept in the same room with her during her illness, as the door stood open between their badly ventilated rooms. The step-father also has consumption. In a family where the grandmother died at the age of ninety, of an intra-capsular fracture of the hip-joint, grandfather at seventy-five, of acute croupous pneumonia, the mother, of Bright's disease, at sixty-five, and the father, of cirrhosis of the liver with hydro-peritoneum, yet of the children of these

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parents and grandparents four have died of phthisis; in one the disease is far advanced, a sister has ozœna scrofulosa, and a brother has a cough. None of the cousins of these children have died of this disease, and the uncles and aunts are all living, as far as I can learn.

Joseph L. died on the 16th of June, 1883, after being confined to his room over a year with pulmonary tuberculosis. The house contained two rooms. His family consisted of a wife and three children at home, and two married children who did not live at home. Of the family living at home, his wife died suddenly shortly after his death, two children who were constant attendants upon their father are tuberculous; the condition of the third, a younger daughter, is unknown. The children who did not live at home continue in good health; each is the parent of three children, who are vigorous and robust.

B. married a man with consumption. She was a member of a family of eight children, who are now all well advanced in years and enjoy excellent health. She had six children, all of whom died of tubercular disease. The mother was infected by her husband, and died after resisting the ravages of the disease many years.

A family moved into a house, following a family of consumptives, and four boys were infected. The parents are living and free from consumption. C. nursed her husband, ill of consumption, for two years. Symptoms of the disease developed in her a short time before his death. The physical signs are well marked. She has had hemorrhages, and bacilli are found in her sputa. Where one case of tuberculosis has occurred in a family others may be expected to follow, usually the nurse, unless careful ventilation and cleanliness can be secured, and the patient is given a separate apartment. To place these patients in a hospital with other consumptives is equivalent to a medical execution. The importance of ventilation can easily be proved if we take the pains to test the rapidity that air currents carry bacilli out of the sick-room. It can easily be shown that this is in exact proportion to the rapidity of the change of the air in the apartment. We have all observed

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how a patient grows steadily worse when in consequence of weather changes he is unable to have his proper supply of fresh air.

Phthisis begins in those parts of the lungs where ventilation is mechanically most difficult, and where, for this reason, the lodgment of infecting material is favored. The apices are usually earliest diseased. Here the respiratory movement is less free than over other portions of the lungs. This is due to the anatomy of the thorax and the weight of the arms.

The blood-supply of the apices is less abundant and mechanically more difficult than to other portions of the lungs. The secretions of this part of the lung are consequently thicker, less easily moved, and furnish an excellent culture fluid. The tubercle granule has its seat primarily where the walls of the smallest bronchioles enter the acini in the connective tissue of the septa, where the exit from the three alveoli is narrowed to one-third of a millimeter. Mechanically and histologically, this is the most favorable point for the entrance of the infecting agents.

Rindfleisch, long before the discovery of Koch, said: "I believe that in the catarrhal secretions of a scrofulous person is contained the tubercular poison, which becomes inoculated in the edges and corners of the narrowest portions of the bronchi." Now we know that the tubercular poison is a parasite, and here, in hardened and colored sections, I have found the bacillus tuberculosis. Everything which favors the entrance and retention of the bacillus increases the liability of infection. Catarrhs, overcrowding, imperfect development of the respiratory muscles, the so-called paralytic thorax, deformities, imperfect ventilation, diminished respiratory movement following pleurisy, and especially the bad air of school-rooms, where some of the children may have disease of the lungs, predispose to infection. I know of several instances where infection has followed pleurisy, and the disease made its first appearance on the side bound down by adhesions. Only last week I examined a case of beginning phthisis where the deposit was in the right apex, and the man had suffered from pleurisy on the same side several years ago. Here the elasticity of the lung

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can not fairly act upon the air-volume, the secretions are retained, bacilli gain entrance, lung ventilation is imperfect, and infection takes place.

The mortality of consumption increases with the density of population. It is greater in cities than in the country. In over-crowded tenement houses the death rate from this cause is high. The relation of the density of population to the death rate from consumption is a vast experiment showing its infectious nature. The facts are grandly significant, because the experiment is world-wide, including every climate and people under the sun.

DISCUSSION.

Dr. Hibbard—Mr. Chairman, In speaking of the last paper read, while I believe that the author of it thought tuberculosis is contagious, yet I think we must not accept the evidence given as establishing that conclusion. It does not always follow. In my own knowledge there was a family of seven children. One died in infancy of a disease I know nothing about. There were five sons and a daughter. The mother died of consumption, and the daughter, at eighteen, died of tubercular meningitis. The wife of the first son died, at thirty-three, of consumption. The second son had a wife that died also of consumption when he was about thirty-five, and he, as well as the first son, was an excellent nurse, and devoted himself to the attention of his wife through all her sickness. The fourth son also had a wife who died of consumption, and he attended her in her delicate condition of health for several years, and finally devoted himself almost exclusively to her, and as her nurse watched her every night during the last months of her life. There were six children, and three who had consumptive wives are still living. The last son died of cholera in 1849, and the fourth son died of some constitutional disease when he was about forty-five years of age. The three sons who had wives who died of consumption are still living—the oldest seventy-six, the next one seventy-four, and the third one sixty-eight,

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and that is myself. Here is a case where it would seem, if there was any liability of contagion, we should certainly look for it, but we have it not.

In the second paper I was glad to see that there was a little abandonment of relying on the National statistics, and an investigation of mortality in our cities. If we undertake to cull the statistics from the State reports, as is done by the paper, there is a liability to the mistake he has pointed out.

Dr. Meyers—Mr. Chairman, I was very much pleased with the papers that have been presented on this subject, and was particularly interested in the doctrine that has been creeping out—that a healthy patient will destroy bacteria. If this be true, does it not account for the fact that is discovered in some families, that where the members of such families are in perfect health that the bacteria doesn't produce consumption, and it is only where the general health becomes depressed by surroundings that consumption ensues.

Dr. Blount—Mr. Chairman, Continuing the thought presented by Dr. Meyers, in cholera it has been demonstrated that the bacteria, when noticed in a healthy stomach, has no effect. The stomach must be deranged to produce disease. I was raised under the idea that consumption was contagious. My father being a physician always taught it. I know of an Auditor of our State, who is now in his grave, who was of a very healthy family, and who was healthy himself, but who had in lifetime two wives who died of consumption, and he died of the disease himself. We have no explanation given us. We must investigate the subject further, and we must expect greater results in the future than we have had in the past. I have been very much pleased with all the papers.

Dr. Powell—Mr. Chairman, While we have heard several cases related here of contagion, and while there seems to be direct connection between the patient and the person contracting the disease, yet those few are isolated cases, and I venture to say these very gentlemen can point to a dozen, or fifty cases where there was opportunity for it, and yet there was no contagion. I can point to a case where a man died about a year ago of the phthisis, whose wife was apparently healthy up to

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within a year of his death, when she was taken down with phthisis and died of it. It would seem as though she contracted it from him. That is only one case that I can point to of that kind, where I can cite a dozen cases in which the patients have died, and other persons who were in the same room for weeks and months did not contract the disease. I believe under peculiar circumstances the disease may be acquired; the system being in certain peculiar conditions the disease may take root. One word in regard to climatology. A great many physicians think you can cure consumption by sending the patient to a certain locality. It has been my observation that patients who have been sent away from home to Colorado, Florida, California and Texas were not, with scarcely a single exception, benefited. I don't send my patients away from home. I think they can have better treatment. Occasionally if there is a disease peculiar to the locality, and other localities are free from it, it may do good.

Dr. Moffett—Mr. Chairman, I am glad to know that the members of the profession are so exercised touching the investigation of this disease, which undoubtedly is the opprobrium of the medical profession to-day. Since the discovery that something different from any other object that has been seen by the aid of the microscope, has been found in persons afflicted with tuberculosis, it seems to have given a new impetus to the study of the disease. As yet I do not see anything that leads to a better method of practice, still I don't wish to be understood as throwing discredit upon the investigation. The knowledge of medicine is composed of that class of investigation that is hidden in the recesses of nature, about which the common mind knows the least possible, and consequently we have to exert ourselves from day to day, and year to year, seemingly to my mind at times, contending with impossibilities. Therefore, I am very slow to believe these things. I don't want to throw cold water on it; I admire the endeavor to bring out hidden mysteries, and yet I can not see that we have made much headway so far, towards the final result, the management of our patients. I fully concur with the gentleman who does not believe in getting rid of patients by sending them away from home.

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Dr. Ruggles, of California, being called for, spoke as follows: Mr. Chairman and Gentlemen of the Society, I did not expect to be called on to make any remarks on this subject. I listened attentively to the papers. One thing struck me, and that was the percentage of deaths in my own State. I have State pride, and I dislike very much that our State should have the credit of the greatest percentage of deaths from consumption. We are taught to believe that California is God's own country in regard to climate. There is one fact we do believe, and are able to demonstrate, and that is that California is the hospital of the United States. They come there to die, and they do die, and it is in that way that we received credit for so large a percentage of mortality. There are several counties in the State that are considered the home for the consumptive; they come there from all parts of the country; I don't know whether from Indiana, but I think so. They come there alone often, are not surrounded by home influences and comforts, and in a very short time they are not only consumptive but very homesick. I do believe that the climate of California is better adapted to consumptives than any climate I am familiar with. In regard to the point that persons are never benefited, I will say this, I know of a gentleman in California who came from Salem, Mass., that had hemorrhage and every indication of consumption, and for two years he stayed out doors all the time in California, and hardly ever went into a house. That man is alive to-day, and has been there for nearly thirty years. I thank you gentlemen.

Dr. Baker—Mr. Chairman, I didn't think I would make any remarks in regard to this matter, but our California brother brought me up. I am truly thankful that this question has been sprung here in this place to-day. There is scarcely a family in all the land that has not in some of its branches this disease. My wife's people have nearly all died of it; my father-in-law, mother-in-law and five children out of that side of the house have gone with lung trouble. I have six children, and only one, a daughter, has ever appeared to have any symptoms. At fourteen years of age she began to cough badly and bleed from the upper part of her left lung. I believe I have studied this matter close enough to tell the place where blood

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may come from and how far the lungs are diseased. If I was correct, one-third of the upper right lung of my daughter was diseased and I think she had a cavity not less than one-half an inch square where the tissues were almost rotted away. I took my daughter to Southern California, where there are so many die of lung trouble. I went up in one of the valleys half a mile or so higher than the sea, and we spent the winter there. My daughter didn't take any medicine. She breathed that pure air. She gained twenty pounds in the winter and almost entirely quit coughing. We came home again. She is now twenty-five pounds heavier than when we started. California is the place to take consumptives.

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Abdominal Surgery with Cases and Comments.*

BY JOSEPH EASTMAN, M. D.,

Professor of Gynæcology and Clinical Surgery in Central College of Physicians and Surgeons, Indianapolis.

CASE I.

Miss X, aged 24, single, raised at housework on a farm; had followed same occupation in this city for the past two years. I was called to see her first October 12, 1884; found her suffering intense pain, located in the occipital region, extending down the back of the neck. Her head was drawn backward, the muscles of the neck were tense and unyielding; she was scarcely conscious, and could talk but little; enough, however, with what I gathered from her sister, to enable me to determine that there had been a sharp, lancinating pain in the right iliac fossa, preceding the pain in the back of the head. Examination in this region disclosed a tumor resembling a large bubo in shape and location. Her suffering seeming to be intensified by my examination, I gave her a hypodermic of ¼ gr. of morphia. Her tongue was dry and protruded with difficulty; pulse, 125; temperature, 103. I learned from her sister that she had been treated for typhoid fever for two weeks.

I prescribed a mixture containing xv. grs. bromide potassæ and ⅛ gr. morphia in each teaspoonful, to be given every hour; also directed hot applications (sponges taken out of hot water)

* Author's Note: This paper is a report of some work to the Marion County Medical Society, which was deemed worthy of reference to the State Society. It is in no sense an exhaustive paper.

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to be bound over the tumor, and hot vaginal irrigation every hour. I saw her next morning; she had rested some better than formerly during the night, yet the usual effect of bromide to relieve pain in the cerebellum was not well marked. This fact suggested additional proof to my mind that the pain in the head was excentric.

At this visit she was able to assist me in tracing back the history of her case to a time two weeks prior, when lifting a washtub half full of water, "she felt something give away in her right groin." A more thorough examination, both vaginal, rectal and abdominal, convinced me that I had to deal with

A HERNIA OF THE OVARY.

Medicinal treatment during the next few days failing to give more than temporary relief, I took Dr. J. A. Sutcliffe with me at my evening visit. The doctor verified my diagnosis and my opinion that an operation was the only source of relief.

We secured a coal oil lamp, asked the father to hold the same, and proceeded to operate. I cut down to the ovary, and found it and the fallopian tube surrounded by at least a tablespoonful of pus. These wandering organs occupied the inguinal canal, which I opened freely, applying a ligature around the tube and ovarian ligament as closely as possible to the internal abdominal ring, removed the ovary and tube, closed the upper angle of the wound, allowing the lower angle to remain open for the escape of the ligature and drainage. Patient made a good recovery.

REMARKS.

Ovarian hernia is of rare occurrence. I believe, however, that in the advance of abdominal surgery it will be found that ovaries prolape in different directions; and where, as in some cases the ovaries can not be found by abdominal section, a search in the inguinal canal will detect an ovary on its way to the labia majora, imitating its analogy to the testicle in its descent toward the scrotum.

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CASE II.

Miss Y., aged 26, consulted me in September, 1883, for painful menstruation, which had gradually become worse since a period about seven years before, when she received a jolt in alighting from a buggy.

She had suffered many things from many doctors, and had rather gotten worse. She had been treated for "womb disease" with caustics, washes, pessaries, etc. She was emaciated and bloodless, the ovaries and tubes enlarged and tender, and the left ovary felt in Douglass' pouch per vagina.

I required her to go to St. Vincent's Hospital, directed hot vaginal douche twice a day, to be used with an irrigator which distends the upper part of the vagina, so as to bring a great quantity of hot water against the pelvic roof. I also directed as much hot milk as the stomach would bear.

Under this treatment, carried out some two months, she felt much better, though she still suffered intensely at her menstrual periods. She returned home, a distance of some fifty miles, with the understanding that if her health did not improve, she would return and submit to the removal of ovaries and tubes.

She returned October 24, 1884, her last menstruation having been so intensely painful as to make her desperate in her demands for relief.

I opened the abdomen October 26. The ovaries were a third larger than normal and somewhat engorged. The left was prolapsed into Douglass' cul de sac and adherent; the fallopian tubes were the seat of chronic inflammation, the left one occluded at its uterine extremity, and had two cysts containing water attached. The right tube was less diseased, but had one cyst containing a watery fluid.

Highest temperature reached, 102; pulse, 120. Her recovery has been retarded; there remains some of the pain running downward from the seat of the adherent left ovary; she has also suffered from hot flashes and burning sensations. I think her ultimate recovery is assured.

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REMARKS.

These hot flashes at the menopause, whether the same be natural or produced by extirpation of the ovaries, are due, in my judgment, to absorption from the uterine cavity of septic material, resulting from retarded cicatrization taking the place of the more rapid and perfect repair of healthy menstruation. We may have, as another cause, absorption from the seat of constriction of the pedicle by the ligature, as there is nearly always a slight localized inflammation at this point.

This case is not reported to show that removal of the uterine appendages is a remedy for dysmenorrhœa, except in such cases as a most careful and thorough examination by all methods reveals decided organic changes in the ovaries or tubes, or both combined; and not even then until the bromides and ergot, with hot milk in large quantities by the stomach, hot water in great quantities by vagina, and a thorough trial of the galvanic current passed through the diseased organs, has failed to cure. There are many such cases of hysteric, cataleptic, epileptic, morphine-poisoned, nerve-wrecked, brain-shattered, reason-dethroned, asylum-homed women, whose lives are, in their own words, "scarcely worth the living," despite the remedies I have mentioned. Some of them are being made worse by treatment for uterine disease by doctors whose only means of diagnosis is the speculum and sound. These women are essentially sterile; these organs are decaying foreign bodies, and their removal justified by sound surgical principles.

CASE III.

Miss Z, aged 22, had been a sufferer from menorrhagia and metorrhagia for eight years; for the past four years uterine hemorrhage was constant, except when temporarily controlled by treatment. Prof. Parvin had on several occasions used the curette, and applied Churchill's tincture of iodine; at other times dilated with tents and used the stronger acids. I examined her in March, 1884, dilated the uterus with sea-tangle tents, and scraped from the interior of the uterus a teasponful of granular substance—a sort of fungoid growth. The hem-

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orrhage was quite free. Wiping out the uterus I applied fuming nitric acid, after the plan of Athill. I waited ten days, dilated again and applied acid. She then returned home, a distance of eighty miles, remained entirely free from any flow whatever for seven months, and seemed to be well when a fairly normal flow appeared. In twenty-eight days from cessation of the flow an alarming hemorrhage took place.

She wrote me: "If you will do the operation you spoke of, I will return to your care for the same, but will not submit to any other treatment."

November 4, 1884, I opened the abdomen and found the left ovary a mere sack, containing a fluid about the color of coffee. It had undergone cystic degeneration. The right ovary contained one large cyst which occupied one-third of the capsule; the tubes were healthy, except that the left was adherent by its fimbriated extremity to the ovary. At the beginning of the operation a sound was introduced into the uterine cavity, for the purpose of lifting the uterus upwards to the abdominal incision. The introduction of this sound was followed by a free flow of blood, which continued during the operation, amounting to several ounces. After the withdrawal of the sound the hemorrhage stopped, and two weeks later, when she was ready to return home, the introduction of the sound was not followed by a drop of blood, and the fungoid growths, which were very red when removed by the curette on former occasions, were now dark brown and bloodless.* Highest temperature, 101; pulse, 120. At the end of two months from the date of the operation she wrote me she was well and has remained so ever since.

REMARKS.

In this case, I am inclined to the belief that the adhesion of the fimbriated extremity of the tube to the ovary was the main factor in maintaining the disturbed relation between the tube and uterine cavity; the periodic movement and attachment of the tube to the ovary being an essential condition to the tubal engorgement found at the menstrual period.

*Ovaries and tubes were shown.

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"Permanent adhesion of the tubes to the ovaries, the result of perioopheritis, is often met with in women who have led lives of prostitutes; and in them a sort of permanent metorrhagia is by no means rare."†

The relation of cystic degeneration of the ovaries to fungoid degeneration of the lining membrane of the uterus, and consequent hemorrhage has not until recently been recognized.

GENERAL CONSIDERATIONS.

In order to avail ourselves of modern advancements in gynæcic surgery we must, especially for diagnostic purposes, understand and appreciate the advances made in physiology; for, within the last few years, the physiology of menstruation has been turned "upside down," so that it is an accepted fact that ovulation begins even in intra-uterine life, and may continue to old age; while the fallopian tubes and uterus (both being developed from the same structures—the tubes of Muller) are the organs in which the change occurs at puberty and at the menopause.

Mr. Tait says he has "been unable to find in the tubes of a girl under the age of puberty any of the ciliated epithelium which afterwards lines it." His opinion is, therefore, "that the changes in the ovary at puberty are entirely vascular; that in the tube they are vascular, muscular, and epithelial. But the most important change of all is the functional movements of the tubes, the absence of which alone makes pregnancy before puberty impossible. At the menopause the changes which are most apparent are those effected in the uterus and tubes; these structures rapidly diminish in size, the tubes are straightened and cease their movements. Here we have proof that ovulation and menstruation are wholly independent; that menstruation is not dependent on the ovaries or ovulation."

Mr. Tait also furnishes "reports of forty-nine cases where actual observation in nine of which ovulation and menstruation were concurrent; fifteen cases of negative proof against the ovulation theory of menstruation, and twenty-five cases affording positive evidence against the theory."

†Tait, p. 32.

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Other authorities could be cited, but it is unnecessary, for with the more frequent abdominal sections, we shall find facts driving theories from the physiological field, and that incurable dysmenorrhœa will have for its cause diseased fallopian tubes, and that if the fimbriated extremity becomes adherent to the ovary by inflammation we have an almost constant uterine hemorrhage. The remedy, in either instance, is the removal of the uterine appendages and arrest of that periodical discharge of blood which belongs almost entirely to woman, and which, knowing how the sight of blood subdues man's passions, was possibly a wise provision of Deity to secure, short though it be, a period of rest for woman's genital organs.

As to the dangers of the operation, it will depend on who does the operation, when and where he performs it. The more times one operates (other things being equal), the more successful he will be.

Second. In this operation, as in all others of any magnitude, to obtain success, it must be performed before the forces of death plus the operation are stronger than those of life. And let me admonish those advising in these cases, that operations left as forlorn hopes will often give results partaking more of the forlorn than the hope. If the entire stock of stamina has been used up by weeks, months, and years of torture and pain, the dangers in operating are increased.

Third. This operation ought not (where it can possibly be avoided) to be done at the patient's home. The hospital where she can be entirely under control of the surgeon is the only suitable place.

With the success of European and some of our American operators, we ought to rescue many of these women from lives of suffering and misery.

DISCUSSION.

Dr. Hibbard—Mr. President, I would express the interest I feel in the physiological part of the doctor's excellent paper. I acknowledge the statement he has made here is entirely new to me. I am not sure that I understand it entirely, but if I do,

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it is that the ova in the human family is gotten up at the same time that the ovary itself is developed, and it is there retained, ready for operation whenever the sudden change takes place in that appendage of the uterus, and it continues so until extreme old age. Is that so?

Dr. Eastman—Yes, sir.

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A Review of the Epidemics that have occurred in Southeastern Indiana, during the last Fifty Years, and the Observations on change of type in our Endemic Malarial Diseases.

BY GEORGE SUTTON, M. D., AURORA, INDIANA.

The first epidemic we direct your attention to was an epidemic of cholera in Dearborn county, which occurred in 1833.

A steamboat ascending the Ohio River, in the month of May, 1833, landed near the mouth of Tanner's Creek to bury one of the deck hands who had died of cholera. Two men, one an old citizen of Dearborn county, by the name of Page Cheek, were fishing near the place this boat landed. The officers of the boat, seeing these men, employed them to bury this body, which they did. All the next day, Cheek, who lived near the mouth of Wilson Creek, about a mile from Tanner's Creek, plowed in the corn field, apparently perfectly well, but during the night he was suddenly attacked with cholera, and died after a short illness. His brother-in-law, Eli Green, went with his wife to the funeral. They resided near Hartford, about six miles from Cheek's residence. Within a week both Green and his wife died with cholera, and in a few days after their deaths three of their children also died, making five deaths out of this family of seven persons. The disease spread through the neighborhood, and soon appeared at Aurora, where a large number of deaths occurred, among the number some of the most prominent citizens. It is impossible now to ascertain the number of deaths which occurred, as no account of this epidemic in Dearborn county was ever published. The disease was regarded at that time as being new, and the epidemic as being the most fatal that had ever visited this part of the country.

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In 1838 the Laughery Valley, which is a few miles below Aurora, where I reside, was visited by a malignant form of malarial fever, different from anything that I have seen since, with the exception of probably a few sporadic cases. Intermittents were prevalent that autumn over the whole country, but along this valley we had a modification of remittent with what we regarded at that time as congestive fever. The patient would be seized with a slight chill, followed almost immediately by profound coma or congestion of some organ, and very frequently died before a physician could be procured. In other cases the chill was followed by fever, delirium and great irritability of the stomach. There was generally in such cases a remission, but no well-marked intermission. The skin and conjunctiva in a few days assumed a yellowish or jaundiced appearance. These cases we regarded at that time as bilious remittent fever, but we probably had every form and type of malarial fever in this locality, such as simple intermittent fever, remittent fever, bilious fever, and pernicious or congestive fever in various forms, and I think I can safely say that every family residing along this valley, for eight miles from the Ohio River, was more or less unwell, and in many families all were bedfast. As there were several persons sick in each house, the physician in his daily round could attend to a large number of patients. We had more difficulty in treating malarial diseases in those days than we do at the present time, as we were not taught then to give quinine in the same liberal doses that we do now. Although we were not taught in those days to give quinine in large doses, still in desperate cases we occasionally departed from the rules then recommended, with what I thought was the best effects.

In 1842 and 1843 epidemic erysipelas prevailed in different parts of the United States. It made its appearance in Southeastern Indiana in the winter of 1842–3. It was known by the popular names of black tongue, sore throat, swelled head, etc. We heard of it prevailing in Ripley county as a malignant disease, and before it reached Aurora, in Dearborn county, we heard that a physician who resided toward the western portion of the county had died of the black tongue. A physician re-

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siding at Wilmington had a severe attack. I was called to attend him, which placed at once a large number of his patients under my care, and I soon had an extensive experience with this disease, which gave me an opportunity of seeing it in all its varieties. The doctor's attack commenced with inflammation of the glands of the throat; the disease, however, spread over the side of his face. He was in favor of an active antiphlogistic treatment in erysipelas, and had bled himself profusely before I saw him. He gradually recovered, however, after a long and tedious illness. We were taught in those days to regard erysipelas as a species of skin disease, of the class pyrexia, and the order of exanthemata of Cullen; but I soon discovered that this form of epidemic erysipelas was not confined to the skin, but pervaded almost every tissue of the body. It attacked the glands of the throat and spread along the mucous membrane, often appearing at the angle of the mouth or nose, and then spreading over the face as well marked erysipelas. It attacked the lungs, and we had an asthenic form of pneumonia. It attacked the pleura, the peritoneum, the cellular tissue, and occasionally spread to the brain or its membranes, producing either delirium or profound coma, and probably never in the history of the county has puerperal fever been so prevalent as during this epidemic. A few cases came under my care which I regarded as internal erysipelas. Puerperal fever was terribly fatal in Manchester township. Most of the cases came under the care of Dr. M. H. Harding, who furnishes some valuable facts in relation to this epidemic. His observations appear as an appendix to this paper, and as they have never before been published, we regard them as valuable contributions to the history of the epidemics of Dearborn county.

The treatment of erysipelas at that period was quite different from what it is at the present. Eberle was our principal authority at that time. He tells us that the treatment of erysipelas "must be strictly antiphlogistic when the fever is of the synocha grade—though frequent or copious bleeding is rarely necessary unless coma or violent delirium exists." He also says that, "From considerable experience in the treatment of this malady, I am satisfied that alterative doses of calomel, with

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daily employment of saline purgatives, will do more towards the reduction of the disease than perhaps any other plan of general treatment that can be adopted. The calomel may be advantageously combined with small portions of ipecacuanha." As the disease had been so fatal under an active antiphlogistic treatment, I adopted a milder course, with what I thought was good results. An account of this epidemic was published in the Western Lancet in 1843.

In the month of July, 1843, after we had seen notices in the newspapers that influenza was prevailing as an epidemic in Pennsylvania, New York, Massachusetts, and other Eastern States, it suddenly made its appearance in Southeastern Indiana, and within a few days after it first appeared a very large proportion of our inhabitants were more or less under its influence. The disease itself was seldom fatal, but it occasionally gave rise to other diseases which were attended with danger, and the origin of a number of cases of phthisis pulmonalis was attributed to this epidemic.

In 1848 we had a remarkable epidemic of scarlet fever. During the time that I had been practicing medicine I had had considerable experience with scarlatina, but the cases were generally mild, with a few exceptions. This year, however, we saw the disease in a new form. We heard of its prevalence in Switzerland county, and was informed that a large number of children had died from the disease. It was supposed to have been brought to Aurora by the boy who carried the mail, as he had then but recently recovered from an attack of scarlatina. Two children were taken unwell on the same day; they resided in the same part of the town, but in different houses. They both died within a short time of each other, and the disease spread through the city. It presented a diversity of symptoms. In some instances the violence of the disease was concentrated upon the throat, in others upon the brain, producing convulsions or coma; in other cases the patient seemed to sink as if from a shock, and in other cases there was violent gastro-enteric irritation, vomiting and purging, with but little rash. An account of this epidemic was published in the North American Medico-Chirurgical Review.

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In 1856 scarlet fever again prevailed in Southeastern Indiana, and at Aurora as an epidemic, but this time in so mild a form as scarcely to require medical treatment. Why should the disease appear at the same place, apparently under the same circumstances, at one time in so malignant a type and at another in so mild a form?

In the spring of 1849 cholera, which was prevailing as an epidemic in the United States, made its appearance in Aurora, and assumed a most malignant form. It for a time was principally confined to a small section of our town, including the portion in which I resided, which was the most dry and elevated, and was regarded as the most healthy part of our city. In this section of the town there seemed to be an accumulation of infection, for more than half the inhabitants died. I was suddenly attacked with the disease while attending patients in the night, and my whole family, one after another, was taken down. My oldest son died after only a few hours' illness, and my youngest child sank to what appeared the lowest stage of collapse from which a patient could recover. In watching the progress of this epidemic it appeared to me that cholera, like other diseases, presented a diversity of symptoms, and that the diarrhea that generally accompanies this disease, and at that time was regarded as only a premonitory symptom, was in reality a form of cholera which occasionally gave rise to the most malignant cases. A report on epidemic cholera was presented to the Indiana State Medical Society in 1853, and is published in the transactions of the society. The report presents information from forty-six physicians, showing the extent to which the disease prevailed in thirty-eight counties, and contains, I believe, the largest amount of information on cholera as it prevailed in Indiana during that epidemic that has yet been published.

In this report the view was adopted that cholera was an infectious disease, and was diffused over the globe by human agency; that the poison germ was introduced upon our continent at Quebec, in 1832, by an emigrant vessel, on which a number of deaths from cholera had occured, and also by the arrival at New Orleans, in the winter of 1848–9, of the ship

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Swanton with cholera on board; that from these local points the cholera poison was diffused over the country, and as it spread it presented a diversity of symptoms, either appearing only as a diarrhea or a disease resembling a mild cholera morbus, or occasionally as a form of dysentery, and also the malignant form of cholera; that these four forms of the disease depended upon the same poison germ, and were but modifications of cholera; that the disease could be spread by persons only unwell with choleric diarrhea (the clothing being slightly soiled by choleric discharges), and that the local malignancy of cholera frequently depended upon an accumulation of the infection—either from the clothes of cholera patients or from the beds and bedding on which they had died, or by throwing the evacuations upon the ground. These views we regarded at that time as new, and so far as I am aware this is the first intimation of danger of infection from cholera evacuations. We recall these views as a curiosity, as they show the direction we took in viewing the disease at the time, and also how near we came at that early period of anticipating the theories which have since become so popular. These views were formed in 1849, in observing the progress of this epidemic in Southeastern Indiana, and were presented to the Indiana State Medical Society in May, 1853.

We were taught at that time that the diarrhea that accompanies cholera was merely a premonitory symptom of the disease, and that diarrhea was never infectious.

Copland, in his Medical Dictionary, page 318, section 64, speaking of the relation between diarrhea and dysentery, says: "Although thus very closely allied in nature and form, they are very often distinct as respect: first, the seat of the disease; second, the symptoms resulting from each. Diarrhea is generally sporadic and *never infectious.*"

We present in this report a number of facts to show that there is an infectious form of diarrhea, and that the diarrhea that accompanies cholera and which frequently is the only symptom is but a mild form of this disease.

Dr. Snow, of London, presented a theory in 1854, that cholera poison emanated from the evacuations, and that it must be

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swallowed to produce its specific effects, and that it was generally introduced into the stomach through the medium of drinking water. Pettenkofer advanced this theory several years later.

Following the cholera a malignant form of dysentery prevailed as an epidemic. As it appeared in some instances to be intimately associated with cholera, appearing amongst our rural population immediately after the introduction of well marked cases of cholera, I regarded it as but one of the modifications of this disease. We have never had an epidemic of contagious malignant dysentery *similar* to what we had at that time, except during or immediately after the prevalence of cholera.

Cholera prevailed as an epidemic in Southeastern Indiana in 1854, 1866 and 1873. There were not as many cases in these visitations as there were in 1849, which we thought was due to the rigid system of disinfection which was adopted, particularly so in 1866 and 1873, and also to the patients being more isolated. There are many interesting facts connected with these epidemics that time will not allow me to give the particulars. I merely direct attention to the fact that cholera prevailed in these years in Southeastern Indiana.

In 1862 we had an epidemic of purpura, generally known by the name of spotted fever, in which there were a number of deaths; some of the patients died within twenty-four hours from the first symptoms of the attack. The skin became covered with purple spots of irregular size. In the cases that I saw there was but little fever; the pulse was small and feeble and the patients remarkably prostrated. Sometimes there was hemorrhage from the nose, and in one case that I saw, from the bowels. None of the cases that occurred in the neighborhood of Aurora were connected with such marked symptoms of cerebro spinal meningitis, although I am informed that this complication occurred at other places. We can only direct attention to this epidemic, which, if fully described, would present facts alone sufficient to make a lengthy report. See Dr. Gatch's paper in the appendix.

From 1836 to 1856 we occasionally had epidemics of a disease

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which was known in those days as milk sickness. This disease was confined to a section of Dearborn county, between six and seven miles in length, andthree and four in breadth. Extending from what is known as King's Ridge, in a southerly direction, to near Hartford. This was probably the most dry and elevated portion of Dearborn county, and that portion of the county most free from intermittent, remittent, or malarial fevers. During these epidemics the cattle died in this locality with a disease known by the name of trembles. Some farmers lost nearly all their stock. This sickness and loss of cattle caused a depreciation in the value of the farms in this section of the county. The premonitory symptoms of this disease were a remarkable feeling of lassitude, loss of appetite, headache, coated tongue, and a burning sensation in the epigastric region. After a variable period these symptoms were followed by nausea and frequent vomiting, and a low grade of fever of a continuous type, and in all cases there was obstinate constipation. The fluid vomited was generally mucous, tinged of a dark or greenish color. There was seldom a well marked chill, neither was there a well marked intermission in the fever. The fever was nearly always of a a low grade. I am well aware that writers have regarded milk sickness as only a modification of our malarial fevers, but it appears to me that this disease must arise from some cause entirely different from the malaria that produces our intermittent fevers, for in Southeastern Indiana milk sickness occurred in that portion of the country where malarial diseases were not known, while along the valley of Laughery, where malarial diseases were the most malignant, milk sickness never occurred, and the cattle did not die with the trembles.

I diagnose milk sickness from malarial fevers as follows:

In milk sickness the attack is seldom accompanied with chills and the fever is generally continuous and of a low grade.

In milk sickness there is nausea and vomiting and obstinate constipation, which is a prominent symptom in the disease.

Milk sickness in most instances is confined to small circumscribed localities, frequently occurring in situations exempt from malarial diseases and is seen only in Western States.

Milk sickness generally makes its appearance during those seasons when cattle are attacked, or are dying with the disease known as trembles.

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In milk sickness small doses of castor oil, epsom salts, blisters over the stomach and enemas are the remedies generally resorted to in the treatment of this disease, while quinine has but little effect.

Malarial fevers are generally preceded by chills, and the fever is either of a remitting or intermitting character.

In malarial diseases there may be nausea and vomiting, but obstinate constipation is not remarkable.

Malarial diseases are seen on low flat ground or along the water-courses all over the United States, and in different parts of the world.

Malarial diseases prevail where there are no remarkable diseases among the cattle, and they seem to have no connection with epizootics.

In malarial diseases quinine is the specific, sometimes aided by emetics and cathartics.

For the last twenty years I have not heard of a well marked case of milk sickness in this section of country where the disease was at one time so common—neither have I heard of cattle dying of the "trembles." The country has since been cleared, the ground cultivated, and milk sickness and the disease among the cattle known as "trembles," has entirely disappeared. The land which was once depreciated in value on account of these diseases, is now ranked among the most valuable in Dearborn county. This is additional evidence that the removal of the forests in many localities so far from being an evil, is conducive to health.

It was many years after I commenced the practice of medicine before I saw a case of cerebro spinal meningitis—now we occasionally have cases and the disease is probably on the increase. The same may be said of diphtheria. Although we have never had a severe epidemic of these diseases at Aurora, still they have prevailed to a considerable extent in some portions of this section of the State. The time allowed for the reading of a paper before the Society prevents me from presenting many facts of interest in relation to these diseases.

In 1861 and 1862 we had a remarkable epidemic of purpura. Time will only allow me to direct your attention to the fact that such an epidemic prevailed. Many cases that came under my care died after a few days' illness. In all cases purple spots appeared over the body varying from mere points to several inches in extent. The disease was not in my practice complicated with cerebro-spinal meningitis or other diseases. It ex-

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tended to the western portion of the county, and as Dr. Gatch gives a description of the disease as it appeared to him, I refer to his paper.

Within the last forty years we have had very remarkable diseases among the inferior animals. The epizootic among the swine, known as hog cholera, has destroyed thousands upon thousands of these animals. The epizootic among the horses in 1873 is so recent as to be familiar to all.

Looking back, then, over a period of nearly fifty years, we have seen in Southeastern Indiana a number of epidemics, and have seen our malarial diseases assume different forms and undergo very marked changes.

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Notes on an Epidemic of Erysipelas and Puerperal Fever, at Manchester, Indiana, During the Winter of 1842-3.

BY M. H. HARDING, M. D., LAWRENCEBURGH, IND.

The winter of 1842-3 was open and wet, the average temperature ranging between 20° and 40° F. Although this was the case, the month of March was unusually cold for this latitude, the temperature averaging no higher than in the preceding February. The prevailing direction of the wind was, during this period, from north to northeast. Early in the winter there occurred frequent cases of erysipelas, usually involving the face and scalp, but in many cases invading other parts, i. e.: the throat and tongue, these latter cases being of marked severity, characterized by swelling of the tongue to protusion, which, presenting a dark, sometimes black appearance, gave rise to the name "black tongue." Ulceration of the fauces and tonsils was common in the severer cases. The simpler cases of erysipelas of the face and scalp were followed during convalesence by complete desquamation of the cuticle, and denudation of the scalp of hair. The severer cases generally terminated fatally. Occasionally occurred cases involving deeper structures, followed by ulcerations and sloughing. These cases were mainly confined to adults—the number of males attacked perhaps exceeding that of the females. This outbreak occurred in a district about ten miles square, situated on high, rolling ground, with good natural surface drainage, in Manchester township, Dearborn county, Indiana. During this outbreak, typhoid-pneumonia was very prevalent and fatal, although the

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area of its distribution was more extended than that of either the erysipelas or the puerperal fever, to be spoken of. At this time, and in the district of the erysipelatous infection, almost every case of parturition became a case of puerperal fever or metritis, or both—the disease setting in between the third and the fifth day after confinement. This condition of affairs, beginning in early January, continued until late in March, with a mortality light as regards uncomplicated cases of erysipelas; but of about 12 per cent. among the cases of typhoid-pneumonia, and of over 50 per cent. of the cases of puerperal fever. Of treatment, little need be said; while unsatisfactory, the best results were obtained from a course tending to support the patients, stimulating medicines and diet, alcohol being of marked service and well borne. Quinia was but sparingly used, and then in but small doses, and not during the stage of pyrexia. The writer of these notes is of the opinion that if the present practice of administering large doses, and that during the acme of the fever, had been in vogue, the results would have been favorable.

LAWRENCEBURG, IND., May 6, 1885.

DEAR DR. SUTTON—I send you a brief history of an epidemic of diphtheria and spotted fever that prevailed while I was practicing medicine in Dillsborough. I think it was the first epidemic of the kind in Southeastern Indiana. It was confined to a small portion of the northwest of Dearborn county, and the southeast of Ripley county. The first patient visited of diphtheria was February 27, 1859, and the disease became quite prevalent, and of a very malignant type, confined principally to the rual districts; until the middle of October of the same year as many as fifty cases, and seventy-five per cent. fatal. From the 15th of August, 1860, and until the middle of September of the same year, eight miles north of the locality mentioned, there occurred eight cases and two deaths, and six miles south, six cases and two deaths. The first year the disease was very malignant, more so than I have ever seen it since, and

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the invasion was so subtle and virulent that death resulted in some instances before the friends of the family were cognizant of the trouble. Medical literature upon the subject was very meager, and the treatment presented by books did not meet the emergency with any thing like satisfactory results. Caustics, counter-irritants, and some constitutional administration was about the extent. It was very discouraging to the physician to encounter such fatal results. The first patient to recover was a bright little German girl, age, eleven years. We had been faithful in our duty, but death seemed inevitable. The last visit found her propped up in a chair, gasping for breath. To mitigate her suffering I made a palliative prescription, a mucilaginous anodyne internally, calomel and pulv. alum applied locally to the membranes, and camphorated oil externally, extended regrets and sympathy, and left my little patient, as I verily believed, to die. People were alarmed and did not visit the sick, and I did not hear of the result until near two weeks, when I met the father, and to my surprise he informed me that Lizzie was quite well, and that after a few applications the membranes became detached. His language was: there come up big pieces, and she improved rapidly. After this my treatment was modified, and results much more favorable.

In March, April, and May, 1862, we had an epidemic of spotted fever, and, as of diphtheria, we think the first to occur in our part of the State of a very formidable type. The first patient visited was March 16th; laborer, age 50, somewhat addicted to alcoholic indulgence. At five P. M. he had a chill, followed by fever and pain in chest, right side. He requested that I treat him as I had formerly for an attack of pneumonia, as he thought he was similarly affected. At nine P. M., same evening, he was very restless, semi-comatose, adverse to taking his medicine, and quite troublesome. Six A. M., on the 17th, his little son called for me to visit his father. I told him I would after breakfast. He began to cry, and said, "Pa has turned purple; please see him." I did so, and to my surprise found him totally unconscious, stertorous breathing, opisthotonos, and literally black over his entire body. The cutaneous hemorrhage had been general. He deceased at nine o'clock.

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Was this a case of spotted fever complicated with malignant purpura? From this time on we had as many as fifteen cases, all of them presenting more or less of the hemorrhagic effusion, and all fatal except one, ranging in age from two years to fifty. The patient that recovered was a lady, age thirty-two; saw her April 1st, nine A. M., and found her in a very restless and semi-comatose condition, with all the characteristic symptoms of a severe attack of spotted fever. You can imagine my feelings when I thought to myself, here is another case to be recorded with the fatal ones. What was to be done? After some hesitancy upon my part I decided to bleed her, which I did quite freely. Her husband and an assistant had to hold her from tossing about the bed. I immediately prescribed diffusible stimulants and tonics. Why I bled her I do not know, as my experience with the disease had not been very satisfactory, unless upon general principles, or to counteract the cerebral effusion, as venesection was not one of the lost arts at that time. At six P. M. Dr. Geo. Sutton met me in consultation, and upon learning of my treatment was surprised that I had bled the patient; thought it hazardous. The stimulants and tonics he indorsed. In conclusion, I will say this was the first and only case to recover; did not walk for six months. What part did the bleeding accomplish? I entered the army about this time, so my experience with that epidemic ceased.

Yours very truly,

J. D. GATCH.

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A General Practitioner's Contribution to the Study of the Subsequent Effects of Emmet's Operation.

BY J. H. DUNNING, M. D., SOUTH BEND.

Some time in the autumn of 1884, being impressed with the lack of conclusiveness of the results of the investigations on the after effects of Emmet's operation, and believing the reason of the failure of the previous writers on the subject was due to the fact that there had been compiled only the experience and observation of specialists, which did not extend over a sufficiently long space of time to rightly judge of subsequent results, I concluded to address a circular to general practitioners, asking them to send me facts and opinions relative to the subject under discussion.

To this end I sent a circular letter to about one thousand general practitioners of this State, all of whom are members of the State Medical Society.

It became apparent to me, soon after starting in this investigation, that I had failed to strike a popular vein, or else the general practitioners of this State had had little experience, either in performing Emmet's operation, or in observing cases operated upon by others. For, although I received a large number of letters and notes, probably one hundred and fifty in all, and the majority of them from representative men, but eleven had had patients under observation after the performance of Emmet's operation.

It is probable that the cases thus reported to me do not comprise the whole number of operations performed in the State,

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or the whole number that have been observed, inasmuch as the circular letter was addressed to general practitioners, so that no reports came from specialists in such a form that I could use them to advantage in this article.

My inquiries were directed in particular to the subsequent effects of the operation, and while the number of cases reported and compiled is not great, indeed, is not great enough to establish general principles, they are reported with a view of aiding another writer in arriving at definite conclusions.

The following table embodies quite largely the material points in the reports sent to me. There are included twenty-seven cases, the histories of which were kindly furnished me by Dr. E. P. Murdock, who has taken the pains to keep them under observation and to record their histories. In compiling these reports all cases that have not been under observation longer than six months have been, except in one instance, excluded. When any one case of a reporter has been used, all cases reported to me by him, that have been under observation longer than six months, have been included in this compilation. One case has been included that has not been under observation longer than six months.

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Subsequent Effects of Emmet's Operation. A Compilation of the Records of Eleven Observers.

NAME OF REPORTER.	No. of cases.	Time Under Observation.	Benefits.	Symptoms returned in.	Reason of Failures to Obtain a Union.	Complications.	Pregnancies.	Termination.	Relaceration.	General Remarks.
E. P. Murdock, Chicago, Ill.	27	Average 10 months.	10 cured. 10 much benefited. 2 partially benefited. 5 unsuccessful on account of no union.		1 becanse of syphilis. 1 from cancer. 3 causes unknown.	11 had complications. 1 cancer. 1 syphilis. 9 various complication, retroversions, vaginitis, prolapsus, etc.	12	11 delivored at full term. Of those— 6 without injury. 4 relacerations. 1 lacerated perineum. 1 miscarriage relacerated.	5	The symptoms for which the operation was performed came slowly in many instances, the patients feeling but little better for several months, but finally being greatly benefited, after treatment to secure involution being most beneficial.
F. M. Ferre, Indianapolis, Ind.	2	18 months.	2 cured.				2	1 at full term. 1 at 7 months. Labor resulting from heavy fall on the ice.		
J. A. Sutcliffe, Indianapolis, Ind.	3	1–4½ years. 1–2 years. 1–1 year.	2 cured. 1 greatly benefited.							One case had passed the monopause, and had incurred the laceration 20 years previously.
W. W. Vinnedge, Lafayette, Ind.	7	9 months to 3½ yrs.	7 cured.				1	Favorably without relaceration.		Do not know the cause of sterility.
T. S. Galbraight, Seymour, Ind.	7	3–3 years. 4–2 years.	5 cured. 2 partially cured.			2 cases had pyperaplesia of uterus, and one of them was bedridden. These were only partially cured.	1	Abortion at the end of 2d month, which might have been due to violence.		Causes of sterility due to physical causes that would probably have prevented conception had not the operation been performed.

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A. A. Hamilton, Marion, Ind.	1	3½ years.	Partial relief. Had phthisis, of which she died recently.				1	Delivery at full term all right.		
O. B. Harrington, Elkhart, Ind.	1	3 years.	Cured.			None.				Cause of sterility, patient avoided pregnancy.
L. S. Openheimer, Seymour, Ind.	2	1-2 years. 1-14 mos.	Both temporarily benefited.	In both cases.		None.				
F. H. Dunning, South Bend, Ind.	10	2-4 years. 3-3½ years 3-2 years. 4-6 to 10 months.	5 cured. 3 much benefited. 1 slightly benefited. 1 not benefited—made worse.	In two cases.	1 Cause unknown. 2 Operation a success.	5 that were cured had none. 1 lacerated perineum. 1 old cellulitis. 3 versions of uterus.	5	1 had an abortion 2d month, due to over exertion is again pregnant. 3 delivered at full term; 1 of them relacerated. 1 aborted at the end of 2d mo.	1	All of the patients except three used means to prevent conception. Of those three one became pregnant and was safely delivered at full term. The other two are sterile, though but seven months have elapsed since the operation in each case.
L. A. Daugherty, South Bend, Ind.	2	1-1 year. 1-4 mos.	2 cured.							
J. B, Green, Mishawaka, Ind.	9	9 months to 3½ years	5 cured. 2 benefited. 2 injured.		1 union after third operation, and cured.	2 cases in which there was dormant cel[ulitis.	3	Favorable in two cases. No relaceration. Labor not prolonged. 3d case not heard from.		The benefits in these cases came gradually. All but one of the patients who did not become pregnant, used means to avoid such an occurrence. That one has been sterile a number of years.
Summary.	71	2 years and 7 months.	39 cured. 18 greatly benefited. 6 slightly benefited. 3 made worse. 5 unsuccessful.		7	20	25	19 at full term 1 premature labor. 1 miscarriage. 3 abortions. 1 termination unknown.	6	

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Assuming that all physicians addressed were acquainted with the signs and symptoms dependent upon laceration of the cervix uteri, one question in the circular letter sent out was, "Did the signs and symptoms for which the operation was performed disappear?" In reply to this question, it was asserted positively that they did, in thirty-nine cases. Hence these cases were marked cured, and the results in the remaining cases are stated as nearly as possible in the language in which they were reported.

It will be seen by reference to this table that the per cent. of cures is 54.9; of the 32 cases operated upon, and not cured, 18, or 56.2 per cent., or 25.3 per cent. of the whole, were greatly benefited. Six cases, or 8.4 per cent., were slightly benefited, and not benefited 3, or 4.2 per cent.

By further study of the table, it will be seen that there were 20 cases in which there were complications, leaving 51 cases that were not complicated. Out of the uncomplicated cases came the cures, so that 76.4 per cent. is the per cent. of cures that may be rightly claimed in this series of cases.

The remaining 12 uncomplicated cases were greatly benefited by the operation.

Much controversy has arisen over the effects of this operation in producing fertility, or sterility, of the patients. This table shows 25 pregnancies, or 35.2 per cent. of all cases reported became pregnant, and that too in a period of time averaging two years and seven months.

By reference to my reports, I find that in reply to inquiries that the causes of sterility are stated as follows:

30 cases, unknown causes; 7 cases, physical causes outside of the results of the operation, preclude conception; 9 cases, known to be avoiding pregnancy.

In view of these facts, we can in truth write 25 pregnancies out of 55 cases, or 45.5 per cent. If the history of each one of the 30 cases were fully known, I believe it would be found that at least one-half of them could, if they would, become pregnant.

As time advances, many of these patients will doubtless yet conceive, since seven conceptions have occurred within the last few months.

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Three of my own patients conceived accidentally, in spite of preventive means used. To make the investigation complete, and to remove all doubt as to the effects of the operation upon the fertility or sterility of the patients, the length of time each patient was barren previous to the operation should have been recorded. Had this been done, a comparison would have given still more conclusive results. Enough has, however, been shown to demonstrate the fact that at least in this series of cases Emmet's operation has not been productive of sterility.

No cases of prolonged or difficult labor in consequence of cicatricial bands, or of rigid os, are reported.

Of the three abortions, two occurred in patients who had had previous abortions at about the same period of pregnancy, and in one of them the exciting cause was violent and prolonged exertion. The third case was thought to be due to violence. The exciting cause of the premature labor was accidental. Nothing was stated regarding the cause of the miscarriage.

The per cent. of laceration is 24, which is but slightly above that of lacerations in normal labor.

The conclusions we are compelled to reach in studying the table we have presented, are somewhat contrary to our preconceived notions. The important ones are:

1. In uncomplicated cases of laceration of the cervix uteri, Emmet's operation affords a safe and certain cure in the large majority of cases, and a means of great relief to those not entirely cured.

2. The operation can not be depended upon to cure other lesions than those arising from laceration of the cervix.

3. The results of the operation are not productive of sterility. They rather favor the fertility of the patients upon whom the operation is performed.

4. It is not productive of abortions, or of prolonged or difficult labor.

5. The per cent. of relaceration is not materially greater than that of primary lacerations.

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DISCUSSION.

Dr. Eastman—Mr. Chairman, permit me to say that I am glad that the Doctor has presented this paper here. It is a practical subject presented to practical men, and in regard to an operation about which much has been said and done. Dr. Emmett, in his recent work, takes back much that he insisted upon in his work some years ago. It is essential to know, in connection with this study, as to what good these operations do, how carefully the diagnosis is made. It is not only necessary to know that the patient has laceration of the neck of the uterus, but it is absolutely necessary to know that she has nothing else but that. I thank the Doctor for the paper.

Dr. Galbraith—Mr. President, the more I know of this subject the more convinced I am of the utility of this operation. I have lately had a case presenting very alarming symptoms, that rapidly subsided immediately after this operation. In this same case the ovaries were very much enlarged and slightly prolapsed, but the symptoms entirely subsided in perhaps four months after the operation. Other cases which have resulted as favorably, but perhaps not so striking as that, have been under my observation. I have witnessed patients who had laceration of the cervix uteri, who had suffered but very little symptoms, therefore I conclude that there is a great difference in the symptoms. Where some may have slight laceration and suffer severely, others may have severe laceration and suffer very slightly. I am convinced that the operation is one of great importance.

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Some Thoughts on Post-Partum Hemorrhage.

BY MARY F. THOMAS, M. D., RICHMOND.

Perhaps no other condition of the parturient woman calls for more prompt remedial measures, administered by a clear head, with a steady hand, and a firm faith in ultimate success, than when the victim of post-partum hemorrhage.

After all parties have been waiting for hours the often slow process of natural labor, and a mutual rejoicing at its favorable termination, the mother especially feeling a thankfulness at escape from her perilous condition, a repose, a comfortable rest, all of which can be realized by the mother but not described, for this condition can only be appreciated by one who has passed through, as it were, the valley of the shadow of death, and came out in the bright sunshine on the other side.

The physician having given all these hours of careful attention, and having remained a reasonable time with the patient without any untoward symptoms present, before leaving for the much needed rest that such an occasion necessitates, turns to the patient to see that all is right, when the feeble voice and blanched face tells all too truly that her life is fast ebbing out, and instead of repairing to his home, no matter how wearied with previous watching and waiting, the physician must renew that attention so essential to avert the dreaded result of fatal hemorrhage.

While it is thought by some that women of peculiar physical conditions or temperament are especially liable to this trouble,

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yet those who have had large opportunities of observation, find that no class of women are at all times exempt from danger in this respect.

Long, tedious labor, no matter from what cause produced, is sometimes the precursor of this condition, the atony of the uterus that follows leaving the mouths of the utero-placenta vessels unclosed. This condition of things may be present with the plethoric or the woman of thin habit, with the difference in favor of the woman of full habit, who has more blood to spare without serious results; and yet no doubt many of us have seen the woman whose physical frame seemed so frail that it looked as though a very little loss of blood at this time would reduce her beyond restoration, and she will hover, as it were, on the borders of the other shore, and from her own intuitive tenacity of life, or some other unexplainable cause, when hope in the attendants has almost expired, she will rally and rescue the citadel of life as securely as those whose "make-up" would point to more favorable results.

Some of the worst cases come on without warning of their approach in any of the marked symptoms attending them. In the words of an eloquent writer, "Every time a child is born, some mother is carried very near the verge of mortal life," and yet so nicely and wisely has nature adjusted all the harmonies of the human being that very rarely do women die at this period from hemorrhage alone. In a good average share of obstetric practice for thirty-two years, the writer has never known one that resulted in death. As a rule, in natural labor, Byford says the "pulse falls a little below its general frequency immediately after expulsion, if the placenta is soft and compressible." I think this generally occurs in favorable cases, and am always fearful to leave a patient with a rapid, full pulse, especially if accompanied with nervous excitement and a flabby, soft condition of the uterus that implies atony of that organ, that will preclude regular and healthy uterine contraction that alone will secure the patient from danger of alarming hemorrhage.

This condition may be caused by tedious labor, where the energies of the system have been so exhausted that the natural

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contractions of the womb are not sufficient to remove the entire placenta, and a small portion remaining will prevent the normal condition of that organ at the time, and expose the uterine vessels to danger of profuse discharge; and here let me remark that we can not always rely on the statement of the patient in this regard. Every natural contraction brings at the time more or less discharge, which may be construed by the patient in her weakness to betoken danger, but we have unmistakable evidence in the pulse and color of lips and expression of the face. So long as the pulse is right and the lips the natural health color, no danger need be apprehended. Relying on these conditions and never leaving a patient when they were not present, accompanied by normal contractions, I have very seldom experienced serious trouble with hemorrhage. And yet these alarming symptoms will sometimes occur with the best care that can be given, without apparent cause. Three such cases have come under my own observation.

In the early part of my professional life I studied Meigs and other authors very carefully, and was fully impressed with the description given where this condition was caused by a clot in the os-uteri, as spoken of by these writers. But two of the cases above referred to are all that has occurred in my care, where the clot has seemed to be present, thus proving the necessity of the mind of the practitioner being free from too strongly preconceived opinions with regard to the treatment of cases they have not seen, and which require the most careful investigation of every individual case.

Mrs. C., aged thirty years, was quite healthy up to her second confinement; nothing unusual occurred during; a little tedious labor, but terminated favorably; May 16, 1860, 11 P. M. Her husband being absent from home, I felt best satisfied to remain with her during the rest of the night. After all the incidentals had been adjusted and the attendants retired, at 1 o'clock, three hours after labor had been completed, and she had a comfortable sleep, I noticed a change in the color of her lips, and with a feeble voice she asked for "water;" and, some persons may think strange of the expression, but the sound of that word water at that time, is yet very vividly impressed on my mind.

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It was the first serious case of the kind that had come under my observation, and all had terminated so comfortably, that no thought was entertained of any accident occurring. Slightly raising her head to put water to her lips, the muscles were so limp it was like a ball in my hand. The abdomen was distended to nearly the size before delivery, with scarcely any pulse perceptible at the wrist, her face blanched, extremities cold, with no visible discharge of blood. Recognizing the fact that it was a case of internal hemorrhage, with the blood clogged in the vagina or os uteri, laying my left hand firmly on the abdomen, introduced the finger of the right hand and found the os completely closed with "a clot." Removing this obstruction, an immediate copious flow of blood was the result, when the patient fainted. Lowering the head below the level of the body, applied warmth and friction to the feet, made firm pressure over the abdomen, gave a dose of ergot; but notwithstanding the efforts to produce contraction, before this could be accomplished, another clot partially formed in the os uteri, but not so firm as the other, nor the distension of the abdomen so great, yet the patient again fainted on the discharge that followed the removal of the second clot. After this there was no untoward symptoms. During all this hemorrhage there was no pains until contractions of the womb had been established several hours. No coagula of the blood again occurred. The patient made a slow recovery; was several weeks before regaining her strength.

Mrs. R., aged twenty-two, May 20, 1880. Her first child was born naturally, after a rather severe labor of six hours. There was nothing unusual in her case from ordinary convalescence until the sixth day. A messenger came at 5 A. M., in great haste; found she had severe pains all night; the first two hours some hemorrhage, then all discharge ceased, but the severe pains continued at intervals; the patient was very nervous and weak, her face blanched and shrunken in appearance, limbs cold; the bed and everything about it completely saturated with blood; abdomen largely distended. On making an examination, found the vaginal tract fully packed with coagula, and could only remove a portion at a time, until having cleared the

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tract by scooping out a common sized wash pan nearly full of coagulated blood, found the os uteri completely closed with a clot; its removal was followed by a free discharge of blood, at which the patient became very prostrate; warmed her extremities, and used free injections of tinct. ferri muriat. and water, washing the parts out thoroughly, and giving small doses of ergot to secure contraction, followed by tonic. She had no return of hemorrhage, but never recovered her strength. Severe cough set in, and in about six months died of consumption.

Mrs. W. was in labor with her sixth child, November 10, 1873. The labor was completed at 11 P. M., without any unusual delay; placental delivery natural in a few minutes after the child. The lady had been in delicate health for some weeks previous to her confinement, but her labor did not seem very exhausting to her, and she was quite comfortable until after the lapse of two hours. Being six miles in the country I thought best to stay the remainder of the night, and after having ascertained, as I believed, that all was safe, was trying to get a comfortable nap, when I was aroused by hearing something like water dropping. Stepping immediately to the bed found the life-blood of the patient flowing out and dripping off of the side of the bed, and she in a fainting condition, though only fifteen minutes before I had looked after her and all was well. Quite a little pool of fresh red bood on the floor, no pulse perceptible at the wrist, face looked pale almost as death, no contraction of the womb, the os as well as the parietes of the abdomen soft and placid, with the blood oozing out in an uncoagulated state. On recovering from the first fainting spell another soon occurred. Soon as possible lowered the head, compressed the womb with the grasp of the hand, applied warmth to feet, gentle friction to the lower limbs and hands; also applied cloths wrung out of cold water to the abdomen, repeating them if need be, watching the effect to prevent chill, at the same time administered brandy and ergot to insure contractions of the womb. The third fainting spell returned before the flow could be checked by the means used, but after that contraction of the organ came up nicely, and there was

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no more recurrence of hemorrhage, and, though she was quite feeble for some weeks, she ultimately made a good recovery.

Thus we will see that with some practitioners the prevalence of the clot in uterine hemorrhage is very rare, and we also find that every now and then cases of dangerous hemorrhage will occur when there seems no discernable cause present, and no means of foretelling its occurrence by any existing symptoms; and it also shows that physicians may leave a patient after staying quite a reasonable time and yet danger come on after they have left, and they not be at all responsible. No one would expect a physician to remain, ordinarily, two or three hours after labor was over and all the necessities of the parturient chamber properly attended to. And yet in two of the cases cited it seemed very fortunate that relief was at hand soon as needed.

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Post-Partum Hemorrhage.

BY JAMES F. HIBBERD, M. D.

Last year I had the honor to present to this society a paper on Post-partum Hemorrhage, which excited an earnest and protracted debate—that I am fain to hope did some good—by bringing up to our professional vision with great distinctness two very important points in obstetrical practice, viz., that there are certain principles underlying the scientific management of post-partum hemorrhage, and that he only is a competent and safe obstetrician who, in advance of his meeting with a case of this hemorrhage, is thoroughly conversant with these principles, it being manifest that after the advent of the hemorrhage there is no time to hunt up the proper practice nor send for counsel. Whatever is necessary to save the patient must be done at once. A delay to do the right thing for even a few minutes may be fatal to the patient, and to do the wrong thing promptly or deliberately may be equally disastrous.

It is these considerations that give me warrant to present the subject afresh at the first opportunity; and, furthermore, the diverse views of the proper management of these cases proclaimed by the polemics last year seem to make it judicious to keep the subject agitated until our professional minds arrive at something approaching unanimity as to the best line of procedure, or otherwise establish the fact that several lines are equally feasible and reliable.

My position last year was that the dogma, so earnestly promulgated by the late Prof. Meigs in these cases, "Turn out that clot," was surely not a safe rule of action in all cases, and

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possibly applicable to only a small minority of them, and after the interchange of sentiment and experience by the members on that occasion I was confirmed in that position.

Although it was not distinctly stated in my former essay, that it was never necessary to insert the hand into the uterus for the sole purpose of clearing it of the clots of hemorrhage after childbirth, such a conclusion was a fair inference from the tenor of the article, and I felt justified in the idea from the fact that in over forty years of general practice, with a full proportion of obstetrical engagements, I had never met with such a necessity. The one condition that would theoretically demand such an interference is when the uterus is filled with blood and the hemorrhage continuing, and the attendant wholly unable to secure contraction of the womb by external manipulation or otherwise.

Holding that the contraction of the womb is the legitimate and natural mode of arresting the hemorrhage, by bending and occluding the sinuses, my thought was that if the contraction could not be commanded by other means, the hand should be inserted and the clot turned out. But it appears that the uterus may refuse to contract, and still the best practice may be not to turn out the clot.

In the Medical News (Philadelphia) of October 18, 1884, there is an editorial reciting the points of my last year's paper in a spirit of commendation, and closing with particulars of a case reported by Lumpe, in a recent number of the *Archiv. fur Gynakologie.*

In Lumpe's case, "after the delivery of the child, the uterus did not contract at all, but remained relaxed like a leather bag, and its contour could not be felt through the abdominal walls. The placenta was detached, but still there was no contraction of the uterus; yet the bleeding was not excessive. More blood was discharged than usual, but gradually the flow ceased, and I felt in the cervix coagula. I believe it would have been most improper for me to have removed the blood coagula from the uterus and the vagina, for only the exceptional coagulability of the blood saved the woman from flooding."

With this additional testimony we must surely see that there

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can not be an unvarying routine of acts to be gone through with in every case of post-partum hemorrhage, but that in this, as in all other disorders, it is indispensable that the scientific attendant first clearly comprehends the nature of the difficulty he has to contend with, and then as fully understands the principles of the means of relief applicable to the case.

To illustrate another point in practice in cases of post-partum hemorrhage, I submit the following:

I was called at 1 o'clock P. M., August 21, 1884, to see J. G. M., in labor with her first child. She first felt pain at 4 A. M. of the same day, and the labor progressed smoothly to 3 P. M., when the first stage was completed, and I ruptured the membranes, giving exit to a moderate quantity of liquor amnii. The second stage of labor was completed at 4:30 by the delivery of a vigorous boy, and the third stage at 4:50, the delivery of the placenta being assisted somewhat by my fingers. The uterus contracted promptly under massage, but showing a slight disposition to relax, and the patient complaining of more than usual pain after normal first labors, I gave her ten minims of Squibb's fluid extract of ergot and the tenth of a grain of morphia. In a few minutes all appeared to be quiet, and soon after I left the lying-in chamber, and was adjusting my cuffs in another room when the nurse notified me that she thought the patient was bleeding too much, and on returning to the bedside I found the patient in great pain, referred to the left iliac region in front and the sacrum in the rear, and that the fundus of the uterus had risen to the umbilicus. I immediately administered twenty minims of fluid extract ergot and a tenth grain of morphia, and resorted to massage of the uterus through the abdominal wall, which induced contraction without reducing its size or position. The patient was lying on her back, now complaining of still greater pain, and I had her turned to her left side, the position in which she was delivered of both child and secundines. The only effect of this turning over was to transfer the pain from the left to the right iliac region, it and the sacrum pain both now so intensified that the victim declared the suffering much greater than at the close of the second stage of her labor. This pain was located where I

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had not before known in a primipara, and it was of a severity I had not before witnessed in a primipara. It amounted to agony. And added to this the uterus was contracting powerfully under manipulation at regular short intervals, but was not at all reduced in size. The pulse had become frequent and feeble, and the prolabia had lost some of their freshness, but no blood was passing the vulva. My diagnosis was that the womb was filled with blood, which the contractions, strong as they were, could not remove.

Here, then, was a case militating against the views I had held and the doctrine I had preached for many years, viz., that a healthy womb after a normal labor did not have a mischievous clot in it that could not be expelled by its own contractile power, stimulated by external manipulation, rendering it always unnecessary to insert the hand into the organ to turn out the clot, according to the orthodox rule in such cases made and provided.

The case in hand clearly indicated to me the necessity of rendering manual assistance to rid the uterus of the offending clot, and I proceeded promptly to that service. Passing my fingers between the labia, I found the ostium vagina closed by a smooth body, seeming to the touch like a ball of considerable dimensions covered with a serous membrane. This puzzled me. In the attempt to obtain knowledge as to its character by a digital exploration of it, it was ruptured, and my fingers passed into its substance, solving the mystery of its nature by demonstrating it a clot of blood, of an extent that plugged up the entire vagina and reaching into the womb. Having determined these facts, it was the work of but a moment to break the vaginal coagulum, and, the contracting womb extruding its contents, the whole mass was speedily driven out through the vulva, and the uterus on the instant was reduced to its proper size and position, the pain and distress immediately disappeared, every thing promptly assumed a satisfactory condition, and all was well. The loss of blood had been considerable, but not enough to require further special attention at the moment, nor did it prevent an ordinarily good recovery of the patient.

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The outcome of this case declared the correctness of my diagnosis so far as the ultimate facts were concerned, but my views were at fault in supposing the barrier to the exit of the womb-clot to be at the uterine os instead of at the ostium vagina, where I found it, and the removal of which cleared away the whole difficulty, rendering it not only unnecessary to pass my hand into the womb, but making it obvious that it would have been bad practice to have done so, leaving me at liberty still to declare that in over forty-four years' practice I have never met with a case of post-partum hemorrhage when, to save the life of the patient, it was necessary to pass the hand into the womb and turn out the clot.

This paper is intended as a plea, as was the one on the same subject last year, for a clear comprehension of the nature of post-partum hemorrhage and of the principles which should govern in its management, to the end that the accoucheur, when suddenly brought face to face with the alarming difficulty, shall at once recognize the essential points in the particular case before him, see quickly what ought to be done, and promptly do it, not failing to turn out the clot if such procedure is best, but not feeling that he must pass his hand into every womb when there is hemorrhage after childbirth because such violent proceeding is sometimes necessary. The scientific dogma in this, as in all other therapeutic procedures, should be that the simplest measure that is promptly efficient is the bets.

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Post-Partum Hemorrhage.

BY MOSES BAKER, STOCKWELL.

I do not know that I can do better than give you a short history of a few of my cases that I have treated in past years. These cases I take from notes from my books.

CASE I.

March 20, 1852, called to attend Mrs. Goans, aged twenty-five years; multipara; she had two children; this was her third labor. She was a large, well-developed woman, but looked pale and feeble. Her abdomen was unusually large for the size of the woman. On examination I learned she was in labor; the os uteri pretty well dilated, the membranes protruding; the membranes gave way in due time and there was an unusual amount of water discharged. The child was born in due time; the womb did not respond to my pressure on the fundus, but failed to contract well, and the bleeding was pretty free. I then introduced my hand into the womb and delivered the placenta. I gave her ergot, but the stomach rejected it, and in the act of vomiting she bled more freely. I placed her head low. I made pressure with a grasping motion on the fundus of the womb, and introduced my other hand into the womb frequently and turned out the clots, and by these operations I could bring on partial contractions, but when I would relax my efforts the womb would relax and the blood would flow. I continued this process for about five hours. I sponged the womb inside with cold

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water, made pressure on the outside, gave ergot, had no stimulus, and finally got contraction sufficient to stop the bleeding, put on a compress and bandage, gave the husband instructions to be sure and not let his wife be raised up or get out of bed on any account, and left. I had not been gone more than two or three hours when a messenger came for me in great haste, saying Mrs. Goans had been vomiting, fainted, and they thought she was dying. I hurried back to her bedside, but she was dead. I learned that after I left she wanted to get up and did loose her bandage and get up, when she turned sick, vomited, fainted, and in a few minutes was dead. Now, I believe if I had stayed with her, kept her head low, kept her quiet, kept the compress and bandage on, kept the clots out of the vagina and womb, she would have recovered. The trouble with this woman was, she did not believe she was in any danger, and she did not believe that young fool of a doctor knew much anyhow. I examined her womb and found it filled to very nearly or quite as large as it was previous to delivery.

CASE II.

March 31, 1858, (consultation); called to see Mrs. McLane, aged thirty-five years; multipara; found on examination that she was in labor and bleeding freely; the placenta was not attached over the os uteri but on one side and below the child. I turned the child and delivered by feet, then delivered the placenta, gave ergot, and the stomach rejected it, as it generally does when most needed. The bleeding was profuse, both before delivery and after. Placed the head low, gave stimulus in the form of whisky, manipulated the womb by my hand on the bowels, kept the clots from forming in the vagina and succeeded in arresting the hemorrhage, but the exhaustion was so great that the woman never rallied, but on the third day after delivery she died.

CASE III.

On March 13, 1855, called to see Mrs. Baker, aged thirty-two; multipara. She was a lax-fibred, thin-muscled, tall, very

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white woman of poor health. I found her in labor with her fourth child. I had attended her on the 18th day of December, 1852, and at that time she bled very profusely, and now, on the 13th of March, 1855, I found her with an uncommon large abdomen, and had every reason to believe, from her appearance, she would have the same trouble again, and, after the os was well dilated, I gave her ergot. I gave her a decoction of the crude ergot, which in my hands has proved the most satisfactory, being the best retained by the stomach. I ruptured the membranes and there was a very free flow of water, and in due time the child was born. But now our trouble commenced. The blood flowed very freely; she vomited, fainted, and looked like she would die. I placed her head low, I kneaded the womb with my left hand on the outside, I put my right hand in the womb and removed all the clots, and inserted a sponge with my hand—the sponge filled with vinegar and cold water—with which I sponged the inside of the womb, at the same time pressing the fundus down into the pelvis as nearly as I could. I gave her whisky and cold water freely to drink, and by so doing I saved her life. I kept up this process hours before I dared to leave her bedside, for when I mitigated or relaxed my efforts the womb would relax and bleeding would commence. The womb appeared to me to be about as flaccid as a wet blanket; I could fold it on itself, and did crowd it down in or on to the pelvis. As the woman was thin in flesh, the anterior abdominal parieties were very flaccid, and the womb could be very well felt beneath them. But I stopped the bleeding, and she got well.

Now for the sequel. I told her if she should ever be confined again, and changed her doctor, to be very careful or she would most likely bleed to death. Some two years after this she was confined again, and she remarked to the doctor that was with her what I had said, but as she had had a quick, easy labor he paid no attention to it; but after dressing her up, went to the table, out of the lying-in room, to his meal. While at the table, one of the attending women came running to him crying, "O, doctor, the woman has fainted. She vomited first and then immediately fainted." She never rallied, but was

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dead at once—most likely from heart-clot, as the blood clots very readily when there is but little left. The women who prepared Mrs. Baker's body for burial told me the belly was as large as before the confinement, filled up with post-partum blood—the vagina, the womb, and the heart, with clots. If the vagina and womb had been kept clear of clots, and the womb pressed down and held there, the head kept low, the probabilities are that the heart would not have formed a clot, and the woman would have been saved.

CASE IV.

May 10, 1869, called to see Mrs. Fitzgerald, age thirty-eight years; multipara; has had four children. Messenger came in great haste, in the night (very dark); three miles to ride. When I got near the house heard the husband coming to meet me, telling me his wife was dying; hurried into the house—a poor little cabin of one room; found the woman lying on the bed in a pool of blood and water, and on hasty examination found a child between her legs, nearly dead, the woman vomiting and gasping for breath. On introducing my hand into the womb I found another child. I took all the props from under her head and placed it lower than her body. I then delivered the second child by bringing down the feet. I then delivered the placenta of the second child (the placenta of the first child had already come away with the babe). I sponged out the womb with cold water and vinegar; made use of strong pressure on the lower part of her belly; kneaded the womb well down into the pelvis; kept the clots out; placed the husband on the foot of the bed so he could hold his wife's knees up, for she was so very restless, throwing herself about so that I could do nothing with her only as she was held. I tried to give her ergot, but it was of no use—the stomach would not hold it, or even water, at that time. The bleeding was most terrible, and I expected her to die, but I worked as only a man that has the good of his patient at heart will work at such a time, and he is the only one that will save his patient under such circumstances. I kept her head low to keep enough blood in her brain to keep

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her from fainting, for fainting at such a time is often death. With one hand in the womb swabbing it out with acidulated water, and the other hand kneading the outside, will cause the womb to contract, if anything will that I am acquainted with, and it did contract and shut up the orifices of the bleeding vessels of both the placentas, and by staying with my patient for twelve hours, and keeping the clot out of the vagina and womb, and then watching her closely for a week, to see that her head was not raised too fast, I saved her.

CASE V.

Called June 2, 1870, to see Mrs. Lucas, age, 33; multipara; has had six children; she rode horse-back six miles the day previous; was wasting some before leaving home; considered herself six months gone in pregnancy; was taken with labor pains; saw her at 2 o'clock in the night; found her bleeding badly; os pretty well dilated; child delivered about 4 o'clock in the morning; afterbirth came away without much effort; she had now very profuse hemorrhage, so much so as to cause her to vomit and faint, and on introducing my hand in the womb I found a protuberance near the fundus, which at first I mistook for a part of the placenta, but on further examination I found to be an interstitial submucus fibroid, and as I was satisfied that this was the cause of the bleeding, I proceeded to enucleate it with my fingers, which I did by tearing it out, which took considerable force; in the meantime I pressed my left hand on the fundus of the womb very hard, so as to bring it down as low as possible. Now, while I was doing this, the hemorrhage was truly frightful, but I could see no other way to stop it but by emptying the womb of all foreign substances. So I worked away until I got it cleared. Now I do not know whether the site of the placenta was over this tumor or not. The tumor when I got it away was about the size of a common hen's egg. It was what I suppose used to be called, by our old authors, a fleshy mole. After getting it away, with all the clots, the womb contracted well, and the woman rallied, got well, and is still living, but has had no more children.

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CASE VI.

August 20, 1856, called to see Mrs. Danahoo, age twenty; primipara; found her in labor; nothing unusual in the labor. All went well till the third day after delivery, when she left her bed, got on the cars and went to Lafayette, twelve miles from home. On returning in the evening of the same day she was taken with violent hemorrhage, and I was called in great haste; found her bleeding badly; womb flaccid, no disposition to contract; woman cold and sweating, and very sick at the stomach. She is the wife of a section hand on the railroad, and of course he had whisky in the house. We gave her hot whisky punch, rubbed her with hot flannels, put her head low, and cleared the vagina and womb of clots; made strong, kneading pressure over the fundus, stopped the bleeding and saved her life. She is still living, but never has had good health since her confinement, and no more children.

CASE VII.

July 5, 1862, called to see Mrs. Casey, age thirty-two; primipara; found her in labor; nothing unusual in the confinement; had a good getting up. In the second week after delivery she had a dispute with her husband in which she got very angry, and went into an hysterical spasm. When I was called to see her I found her bleeding pretty profusely from the relaxed womb. The bleeding was not so profuse as to immediately endanger her life, but was enough to make it necessary to keep her very quiet in a recumbent position. I gave her ergot, made use of compress and bandage, cleared away the clots, kept the room quiet, but all to no purpose; she would bleed. I washed out the womb with cold acidulated water (it was before the days of Emmett and hot water), but still she would bleed. I then introduced a large rubber catheter into the womb, and injected a stream of watery solution of per-chloride of iron, and that stopped the bleeding, and my woman got well.

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CASE VIII.

November 6, 1880, was waiting on Mrs. E. Lucas, a primipara. She had been in labor for seventy hours. Believing she could not be delivered per vias naturalas, I, after consultation, concluded to open the womb by incision. I did so, and removed the child with but very trifling hemorrhage. I now undertook to remove the placenta, which I found situated on the back part of the womb below the fundus, extending down on to a fibroid mass that came off from the lower back part of the womb and filled the pelvis, making the operation necessary. Up to this time there had been but little bleeding, but as soon as I commenced peeling off the placenta the hemorrhage was frightful. It was not in jets like arterial hemorrhage, but it welled up like water gushing out of the earth. I peeled off the placenta as rapidly as possible. I suppose I may have been a half minute getting it off, but this gave me an opportunity of seeing what I never saw before. That was the lobules of the placenta drawing out from among the vessels of the body of the womb. After getting the placenta out of the way I took the upper part or fundus of the womb in my hand, and pushed it down on to the fibroid below with one hand while with the other hand I removed the clots and swabbed out the womb with hot carbolised water. I used the sponge as rapidly as possible so as to keep the blood from distending the womb again, and in a short time, I should think some five minutes, I had the flow entirely arrested. Now the diameter of the placenta was probably some six inches, while the diameter of space it occupied on the contracted womb was not more than two inches, and the mouths of the bleeding vessels were all closed up, so that there was not the least danger of bleeding if we could only keep up good contraction. In the meantime the woman was very prostrate, pulse very feeble, and my assistant injected her arms very freely with pure brandy—some thirty or more hypodermic syringesful in a short time. We also used the fluid extract of ergot hyperdermically. Every syringeful of the brandy brought up the pulse, but I could not see any good effects from the ergot; but my woman bled no more, and got well.

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CASE IX.

Called May 8, 1881 (in the night) to see Mrs. E. Storms, a young woman, aged 28; multipara. She had one child, three years old; she supposed herself pregnant at the seventh month, although her abdomen was larger than it had been before at full term. I found her bleeding and vomiting; on examination I found the os uteri partially dilated and soft to the touch, as though it might be easily dilated; there was very little or no contraction, no pain; the stomach would not retain the ergot. Introduced the sound, with the intention of rupturing the membranes, but I found no membranes to rupture; the sound passed to the fundus without any opposition, and then I could pass it from side to side with the sensation of passing it through a mass of partially clotted blood, but it did not increase the bleeding. I then introduced my finger and brought away a part of the contents of the womb, and on examination found it a mass of hydatids, or that kind of tumors that our authors say is a degeneration of the corium, and I now understood I had no trifling matter to deal with. The husband of Mrs. Storms is a druggist; I sent him to the store and got some pulverized alum, or more technically the sulphate of alumnia, and a Davidson's syringe. I had him make a saturated solution of the alum in hot water; I then dilated the os uteri so that I could insert my hand and commenced detaching the masses of hydatides. I would peel off a patch of the membrane with the hydatides attached, which would cause profuse bleeding until the woman would become very faint and sometimes vomit; then I, with the assistance of the husband, would wash out the womb with the hot saturated solution of alum, which, with pressure on the fundus, would stop the bleeding; then, after filling the stomach of the woman with hot whisky punch, I would peel off another mass, and so on, till we got them all away, which took more than one hour, and by this time the woman was exceedingly prostrate from the bleeding, but when once the womb was entirely emptied, there was but little trouble to bring on contraction and arrest the flow by the hot injec-

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tions, keeping the womb clear of clots and kneading the womb well into the pelvis. In this case I was compelled to keep the head low for some days, to prevent fainting and vomiting, which would most likely have caused more bleeding, but as it was the woman got well.

And now, Mr. President, I will (with your permission) recapitulate a little, and I am done. I would, if I was treating post-partum hemorrhage that I considered severe enough to endanger my patient's life, put their heads low, lower than their hips, firmly press the womb down into the pelvis, with one hand, while with the other hand in the womb I would remove all the clots of blood or any other foreign matter that I might find there; at the same time give ergot, if the stomach would retain it, give stimulus, give opium, if I thought best—but of more importance than all else, keep the womb clear of clots—turn out the clots.

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Excision of Cancer of the Rectum.

BY GEORGE J. COOK, M. D.,

Formerly Professor of Anatomy in the Kentucky School of Medicine, member of the Marion County and Indiana State Medical Societies, Etc.

According to statistics, the rectum stands fifth in frequency as a point for the development of cancer. The uterus, stomach, female breast, and the liver being the four parts of the body in which we find malignant growth more frequently than in the rectum. About nineteen in every twenty cases of cancer of the rectum are epithelial in form, next in frequency is scirrhus; encephaloid and other varieties are so rare that many surgeons of large experience in this practice have never seen a case. This may be considered fortunate, since epithelioma is the least malignant form of cancer, the slowest in growth, and slowest to poison the system and establish a cachexia, hence presents to the surgeon the greatest chance for successful surgical interference.

Statistics of operations for the removal of cancer of the rectum, during the past few years, are very encouraging, and indicate the propriety of removing these malignant growths from this organ as we do from elsewhere in the body. But in performing this operation care must be taken to select the cases, for if removal is attempted in improper ones, only failure can be expected, with discredit to the operation. With properly selected cases, as good results may be expected from removal of cancer of the rectum as from removal of this growth from other parts of the body. The early removal of a malignant growth from any region is important, but from the rectum it is especially so, on account of the very free communication,

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through the blood and lymph channels, between this and other important organs. There is a large current of blood passing directly from the rectum through the liver, and the lymphatics, which are numerous in the rectum, lead to the large group of glands lying along the vertebral column. Through these free channels it would seem easy, at least more so than in some other parts of the body, for some of the cells or fluid of this abnormal growth, to be washed away and lodged elsewhere, resulting in secondary growths and the production of a cachexia.

The contra-indications to the operation may be named as follows:

1. When the disease has involved the rectum to a point where its removal would be impossible without opening the peritoneum. The most convenient way to determine this with accuracy is by the finger. The point to which you can reach in the rectum, with a finger of ordinary length, is the highest point where it is safe to remove without danger of wounding the peritoneum. So in an examination, if you can feel healthy tissue all around the gut above the growth you can remove it without danger to the serous membrane; but if the growth extends beyond the reach of the finger it is not safe to operate.

2. When the growth has involved surrounding organs as the uterus or bladder.

3. When the surrounding lymphatic glands or the liver or other abdominal organs are involved, or a cachexia is established. If the cancer is at the anus, the inguinal lymphatic glands will be the first involved, but if higher up, the glands located in the sacral and lumbar regions will be the first affected. Many operations for the removal of cancer of the rectum have been performed where the peritoneal cavity has been opened; some of these cases have been successful, the patients recovering from the operation and living perhaps for months or years, but the measure of success has not yet been sufficient to justify it, and when we take the history of all the cases operated on in this way, I do not doubt but that the aggregate of life has been shortened. When the rectum is removed to a point necessitating the opening of the peritoneum, it is impossible to adjust the edges of the wound and close the peritoneal cavity per-

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fectly, as we do when the abdominal wall is cut through, and peritonitis is prone to follow. But this is not the only objection. When the disease has involved the peritoneum and that part of the rectum covered by it, other organs are almost certain to be involved through the free lymph and blood channels leading from it, rendering the complete removal of diseased tissue impossible.

In some of the cases that seemed at first to be successful, it was evident in a very short time that secondary growths had begun and the life of the patient was not lengthened.

In December, 1883, I was called in consultation by Dr. T. B. Harvey, of this city, to see a case of cancer of the rectum, which after examination was deemed a proper one for operation. A description of this case will illustrate several points to which I wish to call attention. I first saw this patient with Dr. Harvey, December 14, 1883, when she gave the following history. She was then forty-three years of age, was a widow and had grown children, all healthy. She was told at the age of twenty-two that she had consumption, but recovered entirely within a year, and had no symptoms of disease of the lungs since. Her father died of phthisis, but her mother came from a healthy family and lived to a good old age. She knew of no case of cancer or tumor of any kind in any of her relatives. She had ceased to menstruate three years before this time, and had good health until in March, nine months previous, except an occasional attack of malaria, such as almost every person in her neighborhood was subject to.

The first symptom of disease which she noticed was a sense of fullness and slight pain in the lower part of the rectum, and by pressure on the skin close behind the anus could feel a small lump, which seemed to be just beneath the skin, but not connected with it. From this starting point in the posterior wall of the rectum, the growth extended rapidly. The pain had increased gradually with the tumor, and was now so intense that she could get but little rest, even with large doses of morphia. She had great trouble to have her bowels move, nothing solid could pass, and she used copious injections of hot water daily to wash out the rectum. The opening through the anus

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would admit only the point of an ordinary syringe, and the passage of this caused much pain. She was considerably reduced in flesh, but her general condition was good and gave no evidence yet of any cachexia. On examination we found the skin involved in the growth almost entirely around the anus, and presented a bluish lobulated tumor, with the small opening in the centre. It being impossible to pass the finger through the anus, we explored through the vagina. We found that the growth had extended around the rectal walls in both directions from the original starting point, but had not quite met in front, there being a narrow strip of the anterior wall of the bowel, perhaps a half in. width not involved; and in an upward direction it had extended almost three inches. None of the surrounding organs or glands were yet involved. The intense pain which began so early was due to the location of the disease, involving almost immediately the terminal branches of the inferior hemorrhoidal nerves. We advised excision, to which the patient readily consented, remarking that she would much prefer to die than to endure the terrible torture any longer.

On December 21, 1883, with the assistance of Drs. Harvey, Rowe and Hadley, I removed the tumor. The patient being under the influence of ether, and in the lithotomy position, an assistant grasped the lower end of the tumor with a strong pair of tenaculum forceps and made firm traction. This drew the skin tense and held the tumor perfectly steady. I made an elliptical incision around the tumor through the skin, about one inch from the anus, cutting freely into the ischiorectal fossa on each side. After ligating the inferior hemorrhoidal vessels cut in this incision, and pressing aside with the finger and knife handle the loose cellular tissue in the fossæ, the next step was to separate the attachment of the levator ani muscle and fascia covering it from the rectum, and also the rectum from the vaginal wall. The traction made by the forceps on the tumor rendered the muscle and fascia tense, and I then separated them from the gut wall with a strong grooved director. I could pass this beneath a small portion of the muscle and fascia at a time and tear it loose very readily, and it avoided hemorrhage that would have occurred if the knife had been used. After sepa-

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rating these parts thoroughly the rectum came down with ease. An ecraseur was then passed around the gut well above the tumor and made to cut out slowly. In the meantime the hemorrhage from the surrounding tissues was looked after. There were a number of small arteries severed in the process of separating the rectum from the surrounding structures, all of which were ligated. These arteries come off from large trunks near by, and it is not safe to trust to other means than ligation. While separating the rectal from the vaginal wall, an assistant passed two fingers into the vagina to make the walls tense and act as a guide to prevent cutting too far. The superior hemorrhoidal vessels, arteries and veins, pierce the muscular coat of the rectum about five inches above the anus, and pass down the remaining distance immediately beneath the mucous membrane, so those vessels were cut by the ecraseur and did not require ligation. There was some capillary hemorrhage which we checked by the free application of the thermo-cautery. The lower end of the gut was brought down with ease to the integument, and joined to it with ten sutures. When thus adjusted there was no tension whatever on the sutures. After this a large tampon of cotton covered with vaseline was placed in the vagina, and a pad of the same placed over the lower end of the rectum and held in place by a T bandage, which pressed the incised surfaces firmly together. No drainage tubes were used, as recommended by some authors. There were not more than four ounces of blood lost during the operation. The patient was placed in bed and when consciousness returned received a hypodermic injection of morphia. Beyond slight nausea from the ether she was perfectly comfortable after the operation, and that night was the first good sleep she had had for months.

The immediate effect of the operation was most satisfactory; there was a complete relief from the pain which she had suffered constantly, nor did she have any pain in the part during the process of healing. I kept her in the horizontal position for two weeks, not allowing her to rise in bed for any purpose. Having taken considerable morphia for the relief of pain it was impossible to break off at once, and she was kept under its in-

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fluence for some days. On the fifth day the bowels were allowed to move, the motion being assisted by a hot water injection. One night during the second week she had an attack of bilious vomiting and purging, with high fever. She informed me that she had such attacks occasionally, and always cured herself with blue mass and quinine. With a similar prescription she entirely recovered from this attack in twenty-four hours. There was primary union between all the surfaces, except the channels where the ligatures came out, and in two places where the sutures cut through the gut wall and allowed the mucous membrane and skin to separate slightly, but these parts healed promptly, There was no disposition towards retraction of the gut. After two weeks she was allowed to get out of bed to attend to calls of nature, and in three was well and able to be up and about the house, and in another left for her home in a distant part of the State. She has continued in perfect health since, with no indication yet of a return of the disease. She has a natural evacuation from the bowels once a day. When she feels a desire to have a passage she has time to go to the water closet and arrange herself.

There is no involuntary discharge of feces, though both sphincters were entirely removed, and the opening is quite free. The only annoyance is a slight discharge of mucus, which is met by keeping a pad of cotton applied to the part.

This illustrates the physiological fact that the sigmoid flexure is the reservoir in which the feces accumulate between the periods of defecation. It is the rule that these cases in which the sphincters have been removed do not have involuntary fecal discharges. When there is involuntary discharge, I believe it is due to an irritable condition of the sigmoid flexure, in which this part of the gut will be excited to contraction by the presence of a small quantity of fecal matter. This irritability may be due to some inflammatory action, or be the result of the disease below and the operation for removal.

In performing this operation we should "make haste slowly." Every vessel from which the blood spurts should be ligated immediately, and the capillary hemorrhage checked with the thermo-cautery if necessary. If this rule is followed there

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need be very little hemorrhage. Some authors claim that the end of the gut can not be brought down and attached to the parts below, or if brought down will retract and tear out the sutures, and they direct to make no attempt to attach the end, but allow the wound to fill up by granulation, which they claim will occur rapidly, while other authors direct that the end of the gut should always be brought down and attached.

I think both of these views are extreme, and that no rule can be observed in regard to this point, but each case has to be dealt with according to the best judgment of the operator. In some subjects the upper part of the rectum is held loosely in the pelvic cavity by a long fold of the peritoneum, forming the meso-rectum, while in others the rectum is held up close against the posterior pelvic wall; this difference in anatomical construction has surely much to do with the freedom with which the rectum can be brought down. In some subjects, especially females, there may be adhesions between the upper portion of the rectum and other pelvic organs, the result of some former inflammatory action, which may prevent it from being brought down. It is of great importance to thoroughly separate from the rectum the levator ani muscle and fascia, also in the female the vaginal wall and in the male the prostate, bladder, etc. If this is done I feel sure that in the majority of cases where three or three and a half inches of the rectum has been removed, the end of the gut can be brought down and attached to the parts below without any danger of tearing away.

When the end of the gut is not attached below, and the wound is allowed to fill by granulation, this cicatrical tissue is very liable to contract, and when healed, the contraction is often sufficient to produce a stricture, which has afterward to be treated. When the end of the gut is attached below, there is no exposed raw surface, and with the precautions which I have indicated, the cut surfaces which are thus brought in close apposition will heal by first intention, as they did in the case described. In the female a tampon of cotton placed in the vagina, and a pad of the same placed over the end of the rectum, and firm pressure made by means of a T bandage, will

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hold the cut surfaces closely together and promote their union. It is of the utmost importance to keep the patients in the horizontal position for at least two weeks, or until the parts become firmly united, not allowing them to raise the body for any purpose.

It must be remembered that the levator ani muscle forms the floor of the pelvis, and if the patient gets up too soon and throws the weight of the intestines against it, before firm union has taken place, damage may result. Besides this the blood pressure which is made on these parts by the erect posture should be avoided until all the wounds are healed. The bowels should be kept quiet for a few days after the operation, but care taken not to allow any accumulation in the colon to interfere with the circulation.

The portion of rectum removed, including the sphincter muscle, in the case detailed, was fully three inches in length. The specimen was examined under the microscope by Professor Brayton, and proved to be epithelioma. It is of that variety denominated "horizontal malignant adenoid," in which the deposit begins in the cellular tissue, between the mucous and muscular coats of the bowel, and spreads in a horizontal plane between the two coats, attaching firmly to both. In this form of adenoid disease the mucous membrane may remain intact until the disease is far advanced, then ulceration may begin at many points, making a honeycomb appearance of the membrane, and the diseased tissue will sprout through these small openings. In this specimen the mucous membrane was only partially destroyed.

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A Case of Compound Dislocation of the Knee Joint.

BY GEO. F. CHITTENDEN, M. D., ANDERSON, IND.

Read before Indiana State Medical Society, May 13, 1885.

On April 27, 1885, R. I., a healthy boy æt. ten years, while attempting to climb upon a moving wagon, slipped his right foot between the spokes, the heel fastening near the hub, twisting his leg around the axle and dislocating the tibia forwards. The condyles of the femur were forced backwards into the popliteal space, entirely through the soft parts, producing a compound dislocation of the knee joint. The external wound occupied obliquely the space between the external and internal hamstrings. The hemorrhage was considerable, and of a venous character from a rupture of the popliteal vein.

The artery was intact, evidenced by the vigorous pulsation of the anterior tibial and dorsalis pedis at the foot. Sulphuric ether was administered and a more thorough examination of the joint revealed a complete rupture of all its ligaments. A reduction of the dislocation was easily accomplished. The constitution and general health of the boy were exceptionally good, and after a consultation of Dr. N. L. Wickersham, Dr. H. E. Jones and myself, and at the earnest request of his family, we concluded, after some hesitation, to try conservative surgery, and save the limb entire if possible. The injury was as simple as a *compound dislocation* of this large and complex joint could be. The shock was inconsiderable, and the opening into the oint so fortunately located as to give the most perfect drainage

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to the wound. A tin trough splint was so constructed as to give constant support to the limb and the proper angle at the joint, maintaining with care the immobility of the joint.

Immediately beneath the wound a large oval opening was made in the splint for observation and convenience of dressing. An opiate was administered, and a refreshing sleep obtained the first night.

The following morning, the 28th, temperature 99 F.; pulse 100 per minute; cheerful and suffers but little pain except on pressure; some swelling; discharging bloody serum from the wound; no hemorrhage.

29th. Temperature, 100 F.; pulse, 108; rested fairly under a moderate opiate; bowels moved by saline cathartic; appetite fair.

May 1. Teperature reached 102; pulse, 120; swelling increased, and more restless; cool water irrigations to the joint had been maintained from the beginning, of a temperature most desired by the patient.

From that time till the present these water dressings have been applied assiduously, except occasionally when the temperature has been down almost to normal. Temperature has ranged between 99 and 101 F., and pulse, 100 to 108, with swelling gradually diminishing, as well as the tenderness. The discharge has gradually become purulent and is not excessive in quantity. Appetite for milk fair.

My last visit before coming here was yesterday (May 11th), just two weeks after the injury. Temperature, 99.4; pulse, 104; tongue nearly clean; appetite good; rests fairly; discharge from wound looks healthy, and swelling very much diminished. I regret that I can not complete the history of this case now, but so far as we are able to see, it looks hopeful. The gravity of the injury and the mortality attending it warrants me in giving it something more than a passing notice.

Professor Gross says: "When the joint is laid freely open and the soft parts are otherwise seriously injured, there can hardly be any doubt as to the propriety of immediate amputation; for such cases nearly always terminate unfavorably, the patient dying either of tetanus, erysipelas, pyemia, traumatic fever or excessive suppuration."

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Professor Agnew says: "Compound dislocations of the knee joint are among the most serious accidents which can befall the human body. The complications arising from the presence of an open wound, communicating with a large and complex joint, the inflammation of which exposes the patient to the risk of erysipelas or pyemia; or if these are escaped, he is exposed to exhausting suppuration, or to necrosis of the bones."

Certainly, in the light of our present experience, no injury more imperatively demands amputation than these. Erichsen, Sir Astley Cooper, and indeed most of the distinguished lights of surgery, were equally prouounced as to the propriety of this course. In this case, however, there were some unusual questions to be considered. 1st—The patient was only a youth of ten years and in perfect health. 2d—The opening into the joint was of such a kind and so located as to make complete and perfect drainage to the wound. 3d—The circulation of blood had not been seriously interfered with. These were factors of no inconsiderable moment in determining us to try conservative surgery. We did not ignore the high authority opposed to this course. Yet after examining these high authorities with great care, it must be admitted, that they lost some of their force in the fact that very little authentic statistics were to be found in support of their position. The dicta of eminent surgeons from Hippocrates to Hamilton has with great uniformity condemned these injuries to amputation. But the barrenness of all these authorities in actual data is quite astonishing. In the collection of cases of compound dislocation reported by Sir Astley Cooper and Bransly Cooper, forty-five in number, only two were of the knee. Prof. Hamilton, of Bellevue, has no case of this kind in his collection. Excision of the joint has been recommended by Gross, Agnew, Hamilton, Andrews, and others. This, however, is a most formidable operation, and loses much of its desirability when we take into account the fact that in the late rebellion it was performed fifty-seven times with only ten recoveries (and in these ten recoveries anchylosis was invariably present), a mortality of 81.4 per cent. Neither should it be forgotten that amputation is an expedient not wholly free from danger. In

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the late rebellion amputation of the thigh was performed 6,229 times, with 2,839 recoveries and 3,310 deaths, a mortality of 53.6 per cent. Nor does the records of civil hospitals improve the rate of mortality. Of thirteen amputations for compound dislocation at the Royal Infirmary at Edinburg only two recovered.

Conservative surgery has surmounted many obstacles in the last decade, and it remains to be seen whether it will not work a revolution in the treatment of these injuries of the knee joint which have generally been considered the opprobrium of the profession. If in injuries of large joints we allow pus cavities to form without proper openings for thorough drainage, the worst consequences will surely follow.

ANTISEPSIS.

Prof. Andrews, of Chicago, in his admirable article on diseases of the joints in the International Encyclopedia of Surgery, gives a careful and systematic plan by which every part of a suppurating knee joint may be thoroughly washed and cleansed by means of drainage tubes and antiseptic washes. He says: "By effecting the cleansing of all these cavities in this thorough and systematic manner the practical surgeon will find that suppurating knee joints are freed from most of their danger. As this is rarely done, a large portion of the patients thus affected die; not at all from the necessities of the case, but from blood poisoning due to the wretched inefficiency of the measures employed to free this complex cavity from its mass of putrifying pus."

If we amputate in these cases, more than half of our patients die if we take our late military statistics as our guide; if we excise the joint, only one in six recover. I see but one field open to us, and that is, in favorable cases, to practice *thorough antiseptic conservatism.*

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Trephining, or Resection of the Spine, With a Report of Three Cases.

C. B. STEMEN, M. D., FORT WAYNE, IND.

Professor John Ashhurst, Jr., M. D., in his excellent work on surgery, in speaking of this operation, concludes by making the following statement: "Surely we are justified in declaring with Le-Gros Clark, that we can not regard trephining the spine as brought within the pale of justifiable operations in surgery." Professor Ashhurst has given this subject much thought, and has furnished the profession with valuable statistics, both in his work on surgery and in his monagraph on "Injuries of the Spine," yet we think he is not justified in making the statement that trephining the spine is not a justifiable operation. I see from the statistics in his work on surgery that three of the forty cases reported by him have been relieved, and in five of the cases the result is not given. One of these, the fortieth, and the last reported by the author, in which my name appears as the operator, I have thought it proper to give to the profession the result, and also that of two other cases in which I operated.

The first case, Mr. W. P. Wolcott, a laborer, while engaged in a sand pit, a portion of earth fell upon him while in a stooping position, causing a fracture of the eleventh dorsal vertebra, followed with all the symptoms of compression of the cord, complete paralysis of the lower extremities, both of motion and sensation, constipation, retention of urine, bed sores, etc. I first saw the patient on the 20th of April,

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1875, about nine months after the injury had been received. At that time the patient was almost entirely helpless; the symptoms above enumerated, continuing with indigestion, great emaciation, and in every way the object of pity; and I am of the opinion that if Prof. Ashhurst could have seen this case when I first saw it and could see him now, he would change the statement in his work that the "operation of trephining for the injuries of the spine is not a justifiable one." After examining the case I concluded that an operation was justifiable, and on the 18th day of May 1875, in company with Dr. H. A. Clark, I proceeded to operate by making a free and deep incision, carefully dissecting the soft parts from the bones of the spine, and then making an effort to cut through the laminæ of the injured vertebra with the immortal Heys saw, but failed. Perhaps I did not know how to use it, but I have never been able to make any use of this instrument, except to fill up my case. I then removed the spinous process with the bone forceps, and used a small trephine, and succeeded in removing the button, and could see the membranes of the cord which appeared to be in a healthy condition. I then removed the entire arch of the vertebra with the bone forceps. After all hemorrhage had ceased, we brought the parts together with a few interrupted sutures and applied a simple water dressing and gave him an anodyne with some potassa bromide. When we visited him on the following day he complained of pain in the region of the bladder and also through the bowels, and in the lower extremities. In a few days after the operation, sensation returned in part to the sphincters and he was able to attend to the calls of nature; also some sensation in the lower extremities and the bed sores healed, and the patient improved in every way, but motion was lost forever. He has not been able to walk or move his limbs since the operation, so that I am certain there must be some pressure on the anterior portion of the cord, perhaps from a deposit in the reparative process, while the system was repairing the fractured bones. The general health improved at once, and has been good ever since. The patient is still living, and is now serving the people of Van Wert county, Ohio, on his third term as County Recorder.

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I wrote him a letter of inquiry, last August, asking him to give me a statement of his condition before the operation and since. I received the following answer:

VAN WERT, O., August 8, 1882.

Dr. C. B. Stemen, Fort Wayne, Ind.

DEAR SIR:—Yours of the 7th inst. received. I would like to give you a brief reply, but the questions you ask are such that I can not answer without making it a little lengthy. The difference in my condition is so great that I must take some time in explaining. I had been injured nine months before I saw you, and was reduced to the lowest stage possible for me to live, suffering from a constant fever, bowels constipated, and only moving when taking the strongest purgatives. My mind reduced to a childish simplicity, my back so weak I could not sit up long enough to change my shirt, sphincters unconscious, paralysis perfect below the hips, and this appeared to be moving upwards. I could not move in any way without help. After the operation and healing, as you know all about, I began to improve in mind and body; appetite and digestion good. My bowels became more regular. I could sleep well at night, read and understand it. My back got stronger, so that I could set up as erect as any one. The relief this afforded me no one can tell. This improvement has continued up to this time. I now use cathartics but seldom, neither have I for over four years. The sphincters are conscious nearly to perfection and I now enjoy good health.

My legs feel as though they were tied; they pinch and burn me constantly, so much so that it is quite annoying to me at times. The skin appears natural. You ask me whether I have been benefited by the operation. I think I have nearly as much comfort as the average individual; am able to make a good living for myself and family, and enjoy the society of friends, and am now able to give as well as to receive the comforts that make life bearable. The operation did not bring that complete relief we hoped for, but enough was accomplished to pay for all it cos and I trust I shall never be ungrateful or considered so by those who so kindly aided me.

Hoping that this hurried account is what you desired, I am, sir,

Yours truly,

W. P. WOLCOTT.

The other case was a gentleman living in Macon county, Mo. I found him eighteen months after the injury.

The injury in this case was in the ninth and tenth dorsal vertebra. I made the same operation as in the previous case, only in this I used the bone forceps made especially for this operation. I removed the two arches of the vertebra above named. After removing the fractured bones, which showed the marks of the fracture, I accidentally touched the cord with the sponge, when involuntary motion of the extremeties commenced, and I am sorry to say that this still continues. I do

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not think that the operation was of any benefit to this unfortunate man. I also wrote him August, 1882, and received the following letter:

COLLEGE MOUND, MACON CO., MO., August 26, 1882.

Dr. C. B. Stemen:

DEAR DOCTOR—About the operation, I can only say that I do not think that it was any benefit to me whatever. I am in right good health now, considering my condition; digestive organs in tolerable good condition. I do not eat much, but enough to keep me in tolerable flesh. My lower extremities have dwindled until they are very small. Have no control of my bowels or urine. I am very slowly growing weaker in my back, and am in constant pain around my middle, about the line of paralysis. Have been troubled for several years with catarrh of the bladder, which seems to be slowly growing worse. Involuntary motion still continues in my lower extremities. I would state that it is my opinion that your diagnosis in my case was wrong. It is my opinion that if the operation had been made at the junction of the spinal column and the sacrum it would have been nearer right, and been more apt to have relieved me; however, this is only guess work with me.

If I can give you any additional information please let me know, and I will do so with pleasure.

Yours truly and fraternally,

R. A. GAUNT.

On the 8th day of September, 1883, we were called to see a case which we found to be a fracture of the tenth dorsal vertebra, the accident occurring twenty-four days previous. We found the patient with complete paralysis of the lower extremities, without control of the sphincters; bladder distended, urine and feces passing involuntarily, also with very extensive sloughs and the back, hips and legs. After a careful examination we advised an operation for the relief of the compression, which was consented to by the patient and his friends. The serious nature of the operation was fully explained to the patient and his wife and friends, and the great danger attending all such operations were made known to him several days before the operation was made, but the patient insisted that we give him the benefit of an operation, and his friends consented to it. On the 17th of September, assisted by several of my colleagues and others, we made the operation. After cutting down to the seat of the fracture and dissecting away the soft parts, we found a fracture of the tenth dorsal vertebra, with a depression of the lamina of the arch. We removed the spi-

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nous process with the bone forceps, and with a small trephine cut through the arch of the vertebra, and then by the use of the elevator we raised the fractured portion of bone, and, as the post-mortem examination showed, relieved the compression, but the cord, which had been compressed for twenty-four days, and no doubt had suffered from some inflammatory process, could but very feebly perform its functions. The patient died on the eighth day after the operation.

We notice that among the leading surgeons, both in this country and Europe, especially those who have made the operation, it is regarded as a justifiable procedure, while on the other hand some good surgeons, and among them our own countryman and able author, Prof. Ashhurst, regard it as not a justifiable operation. But it will be observed that those who oppose it do not speak from experience, yet some have made the study of injuries to the spine a specialty, and their opinions are worthy to be considered. We would not find fault with those who oppose the operation, yet we think the reasons for their opposing it are not well founded. If but one case in a hundred can be benefited, certainly that one case is entitled to receive the relief afforded by the operation. In our own experience our first case was permanently benefited by the operation, and in the patient's own language, "I think I have nearly as much comfort as the average individual, am able to make a good living for myself and family, and enjoy the society of friends and am now able to give as well as to receive the comforts that make life bearable." If the teaching of Prof. Ashhurst would have been accepted, this poor unfortunate man would have been compelled to have suffered on and died without the relief given by surgical interference. The second case was, perhaps, not benefited, yet his condition was not made any worse by the operation, and while he claims that he was not benefited, some of his friends think that some relief was afforded by the operation. The third case died on the eighth day after the operation, but life was not shortened by it, as the patient died from exhaustion.

This class of cases is the most deplorable of any coming under the care of a surgeon, and we must confess that we feel

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like doing something to relieve them, even though but a very small degree of benefit can be hoped for. We would repeat what we have stated before, that we believe the operation to be a justifiable one, even if we benefit only a very small per cent. of our cases; and for myself, I would say that I would not hesitate to operate, either immediately after the injury or as soon as the symptoms of active inflammation had subsided. I desire, in closing this paper, to make special mention of the support given me in all of these cases by leading members of the profession. The operation is a difficult one, and no surgeon should undertake it unless he has first skilled his hand by making it on the cadaver. In my first case I was greatly assisted in the post-mortem room of the Cincinnati Hospital by Prof. P. S. Conner, M. D., of the Medical College of Ohio, and other members of the faculty of this college.

DISCUSSION.

Dr. Myers—Mr. President, in replying to the paper on "Trephining the Spine," by Dr. Stemen, I disclaim all antagonism to the essayist, but one of the cases was under my own observation for twenty days, and I had no confidence in surgical procedure. I also desire to say that the evidence offered us in the form of letters from patients is not reliable; it is the method resorted to by quacks. You can see these letters in the newspapers every day, and who believes them?

I do not believe in the operation as a justifiable one. I could refer in support of my views to various authorities. Abernethy says: "I certainly would not do it." Sir Charles Bell says: "The man must be already dead whose condition is not made worse by such an operation as this." Traverse was present at Tyrrell's operation in 1822, and expressed the opinion that the operation would not succeed. No improvement followed, and the patient died in eight days.

Among the military surgeons it has met with profound disfavor, for Lidell says that "he has failed to find one successful case on record." Jobart characterizes the operation as "*barbare*

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et ridicule." Dr. Gurlt resected the vertebræ of twenty-four cats, and they all died "horrible deaths." Malgaigne call the operation a "desperate and blind one."

Again, in considering the probable pathological lesions and anatomical difficulties that will be likely to present themselves. Shaw says (in Holmes' System of Surgery): "The incision must be both long and deep, being made through the skin and the muscles and through the blood infiltrated in the torn structure down to the broken bone. The main object being to remove the fragments and to *lay open the vertebral canal*, the external wound will communicate not only with the fractured surface, but with the interior of the canal which contains the spinal cord. To the mind of the surgeon accustomed to witness the disastrous effects of compound fractures, the condition here described must appear the most formidable that can be conceived. Let the young surgeon feel assured that in abstaining from performing it, his forbearance is not neglect, but a positive duty to his patient." A physician who was present, informs me that it only occupied fifteen minutes. The autopsy confirms his statement that the relative position of the vertebræ was in no way changed by it.

I will now quote from our ablest writers. Thomas Bryant, of Guy's Hospital, says: "Cline was the first to put in practice the operation, and on his great authority the operation was repeated with no success. The great argument, however, against the operation is derived from the fact that in few post-mortem examinations has the condition of parts indicated that the slightest good has been derived from its performance. The danger of a fractured or dislocated spine lies in the injury to the cord, the result of a stretching or crushing of its substance. When the cord is much injured by the accident the mischief has been done, and no removal of the displaced bone can undo it or neutralize its evil. If the cord is uninjured, no operation is called for."

Smith says, in his Operative Surgery, that "trephining the spinal column to relieve a compression of the cord, whether from depressed bone or extravasated blood, is now regarded as a useless operation."

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Le Gros Clark concludes that the operation is unjustifiable; neither can he agree with some that if it be not productive of good, it is harmless. He says: "To weaken still further the remaining connections of a broken spine, to convert a simple into a compound fracture, to expose the sheath of the cord, and possibly the cord itself, and to entail risks attending the period of repair, can not be regarded as matters of indifference. Perchance the time may come when the means of diagnosis at our command, may enable us to judge with more precision of the nature and extent of the injury inflicted, but at present, with every disposition to regard the subject impartially, I can not regard trephining the spine as brought within the pale of justifiable operations in surgery."

Erichsen is equally decisive. He thus expresses his opinion: "In case of fracture of the spine, it has been proposed to trephine the injured bone and elevate a fragment that has been driven in upon the cord. This operation, though performed by Cline, Cooper and Bell is, I believe, now generally abandoned by the best surgeons in this country, owing to its invariable and, indeed, intrinsically fatal character."

Ashurst says: "Considering the not infrequently favorable issue of these cases under expectant treatment, and in view of the fact that there is no well authenticated instance of complete recovery after its employment, we declare it to be an unjustifiable operation."

I will now refer to the case: On the 17th of August, 1883, I was called to visit Carl Somieski, a Polander. He was employed as a teamster at Olds & Co.'s wheel works. While riding on a load of spokes he attempted to pass beneath a crossbeam, in a stooping posture. He was caught and violently doubled up beneath the beam, after which he fell from the wagon and was found in a state of partial insensibility. Upon recovering consciousness he found the lower extremities to be completely paralyzed. Afterwards he was conveyed to his home. I found anæsthesia from the ninth dorsal vertebra downwards, with loss of power in the legs. Communication was cut off between the sensorium and the lower limbs. He continued in this condition during the entire time that he re-

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mained under my care, a period of twenty days. Intelligence perfect, bowels constipated, the urine highly ammoniacal, loaded with pus cells, mucus cells and bladder epithelium; he had no control over the sphincters; catheterism twice a day. After the second week the limbs became œdematous, and there existed a large, sloughing bed-sore upon the sacrum. At this time, also, the intercostal muscles acted fairly well, and the chest-expanding power was good. The seat of injury was located about the three last dorsal vertebræ. Here the deformity was well marked, and pressure over this region was attended with pain. My prognosis had been invariably unfavorable. About the twentieth, and before this period, he asked me if an operation would benefit him? I answered in the negative. He then informed me that a doctor had visited him and assured him that he could cure him by trephining the spine, and I received my dismissal. Who this physician was I know not, but it certainly could not have been Dr. C. B. Stemen. If time permitted, I could refer to the newspapers heralding the event. After the operation the Fort Wayne News said: "Yesterday afternoon the operation of trephining the spine was performed by Dr. C. B. Stemen. The patient is Somieski, the Pole. This morning his condition was such as to give hopes for his partial if not complete recovery. It was found by the surgeon that three broken vertebræ were compressing the spinal cord. When these were lifted up abdominal breathing and a sensation of pain in the limbs immediately followed." Now, gentlemen, please remember that "when the vertebræ were lifted up" the patient was under the influence of ether, and yet he reports that "pain in the limbs immediately followed."

September 27, 1883, the Fort Wayne News said: "Carl Somieski, the Pole, whose spine was crushed, died last night."

The compression had lasted nearly forty days. Symptoms of myelitis were present in the earlier part of my treatment, as proven by the temperature, complete loss of sensibility and control of the sphincters, and deep sloughs over the sacral region, not the result of pressure alone, but of the supply of nerve force being interrupted by the injury sustained by the cord, the impaired nutrition affording the strongest evidence of the inutility of any surgical procedure.

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What I claim, is, that owing to the length of time that compression had lasted, the crushed and disorganized condition of the spinal cord, its power to transmit sensation having long since ceased, its anatomical relations having been destroyed, it is not true that by merely elevating the displaced vertebræ it would again assume its physiological functions, establishing "abdominal breathings and transmitting nervous impressions to the lower extremities." I will now sustain this position assumed by offering quotations from the highest authorities known to our profession, notably: Charcot, Gull and Paget.

Charcot says: "In compression of the spinal cord it is not a question of purely mechanical phenomenon, but at the seat of compression a reaction of an inflammatory nature is the almost inevitable consequence of spinal compression—myelitis." The man dies not because the bones of his back are broken, or because one vertebra has been separated from another, he dies from inflammation of the spinal cord.

"It is the progress of inflammation to the spinal marrow," say Sir Charles Bell, "and not the pressure or extension of it which makes these cases of sub-luxation and breach of continuity of the tube fatal."

Sir William Gull thus describes the post-mortem appearances in a case of injured spine: "Opposite the fifth and sixth dorsal vertebræ the cord was softened through all the columns into a thick, greenish muco-puriform fluid, with a tinge of brown. Were the spinal cord a shapeless mass like the liver or the spleen, it is conceivable that severe damage might be done to it without interference with its peculiar functions, but being as it is a slender cord, injury like the broken link in the chain, renders its functions inert."

Through the politeness of the coroner, I was afforded the opportunity to examine the vertebræ removed from Somieski; the three last dorsal. There was an oblique fracture through the eleventh. Through the one said to have been trephined, a small circular hole existed. The depth *failed* to extend to the spinal canal; a director quickly reached the floor of the opening. In the spinal canal what remained of the cord was a pultaceous mass, infiltrated with a grayish-yellow exudation, softened, the

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result of inflammation. Myelitis had evidently been present long anterior to the time of the coroner's inquest.

I will now submit to the profession, was this a case of trephining the spine? In lithotomy, we cut *into* the bladder; in enterotomy, we cut *into* the bowels; in tracheotomy, we *open* the trachea, and as the vertebral canal had not been opened, why call it a case of trephining, when the operation of trephining is defined to consist in the *complete* perforation of a bone by means of a small circular saw?

And now, gentlemen, I think it due to the profession, and we owe it to ourselves, that the statements made of our success be truthful, not obtained from letters, but we should rely upon observations, the objective and subjective symptoms carefully studied with the greatest possible precision.

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On Excision of Internal Hemorrhoids.

BY E. E. GLOVER, M. D., TERRE HAUTE.

I but repeat what is well known when I state that few operations in surgery have been at one time and another more thoroughly condemned than that of excision of internal hemorrhoids. And most justly, too; for as practiced when it was first devised, alike on every variety of hemorrhoidal tumor, the death-rate from hemorrhage alone was something enormous, and surgeons were glad to turn to other and simpler methods of treating these tumors.

The foregoing remarks, however, should be understood to apply to the operation as it was practiced a good many years back. Within late years the operation has been revived, owing, no doubt, largely to a modified form of excision practiced by Henry Lee, of London, in 1848. But it owes perhaps its greatest impetus more directly to Mr. Allingham, the distinguished rectal surgeon of St. Mark's Hospital, London. It is proper to say, however, in this connection, that our improved knowledge of what cases are suitable for excision, the improvements in the operation itself, no less than our improved means for arresting hemorrhage both during and after the operation, have done more than all else to stamp the method as a legitimate and, under proper conditions, a most valuable surgical procedure.

It so happens that no one method of treating hemorrhoids is entirely applicable to every case of the disease. Sometimes one, sometimes another of the various operations in vogue is best, now in this case, now in that, and the choice of the pro-

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cedure, must at last turn upon the character of the tumor, the condition of the patient, and other causes needless to mention here.

Excision is applicable to but a limited number of cases, and these without exception in cases where the tumors are small, accessible, and not above four in number. In this class of cases the advantages which the operation offers are to be found in its seeming freedom from all danger to life; in the slight constitutional disturbance which it excites; in the very quick recovery which it almost uniformly insures, the patient, as a rule being cured in about half the time required by any other method; in its being comparatively painless, owing to the temporary paralysis of the sphincter muscles and the removal of the tumors; in, finally, that the operation is not, as in some other methods, ever followed by stricture.

The objections to this procedure, as stated by its opponents, would seem to be that it requires an anæsthetic, more care and skill than hemorrhoidal operations in general, and that there is danger from hemorrhage. For my own part, I think anæsthesia a great aid in the large majority of rectal operations. The operation itself, though it may seem somewhat complicated, is in reality simple enough. As to the latter objection, the means used to control bleeding, namely, torsion, heat, and the use of styptics, would seem to insure all reasonable safety. An insidious hemorrhage into the rectum to a serious extent would be an impossibility, as with a dilated sphincter and the parts lightly packed with styptic cotton, the bleeding would show itself externally. If an accidental copious hemorrhage should occur, it could be *positively* controlled by the use of the cautery or by packing the rectum with a bell-shaped sponge and cotton-wool. It is the opinion of many excellent rectal surgeons that a hemorrhage into the rectum from an operation, which can not be controlled by the cautery or packing, is a thing excessively rare.

The operation is done as follows: The patient's bowels being well emptied, he is placed upon a suitable table and thoroughly etherized. With the fingers or thumbs the anal sphincters are now gently but fully dilated. Van Buren's rectal retractor or

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Sims' vaginal speculum is then carried into the gut—a depressor may be added if necessary—whereby the seat of the piles is fully exposed. The tumor is then seized with a tenaculum forceps and drawn well down, when the base is embraced with the blades of a Smith's hemorrhoidal clamp,* just sufficient pressure being made to prevent the instrument slipping and to control in some degree the hemorrhage, without exercising such force as to bruise the parts and thereby cause a slough. In this way any considerable hemorrhage at this stage is impossible. The tumor is now cut off with either the knife or scissors, near the clamp—being careful to leave sufficient stump to prevent its slipping through the blades of the instrument—and all bleeding vessels twisted. If none bleed at the moment, open the blades of the clamp somewhat, when usually one or two vessels will be found to spout. Subject these to immediate torsion. This proving effectual, remove the clamp and apply small sponges wrung out of hot water to the parts, whereby any oozing is usually readily checked. Treat other piles that may be present in a similar way. When all hemorrhage has ceased,† wet a wad of cotton—to which it is well to previously attach a strong thread—in a solution of tannic acid—one ounce tannin in one ounce of water—and carry it as high into the gut as the seat of the tumor. Finally give an opiate to prevent too early movement of the bowels.

In the seventy cases of excision reported by Mr. Allingham, no recurrent hemorrhage occurred, but little pain was experienced, and nearly all of his patients were absolutely well by the sixth day, Mr. Allingham saying that he means by this that the wounds were all soundly healed by that time.

My own limited observation corroborates the larger experience of the British surgeon. I have considered some of my patients as being "absolutely well" on the fifth day; others were out and able to attend to business in three or four days.

*Mr. Allingham does not use the clamp in his operations, but trusts the vulsellum to hold the stump.

†In illustration of how readily bleeding from a hemorrhoidal vessel may sometimes be controlled, I may mention that in removing a large tumor with the clamp and actual cautery, the iron being over hot, the end of the vessel was burned off, and as a result did not close, but bled at once and freely. I seized the vessel, and after compressing it with the forceps for the space of but two minutes the hemorrhage entirely ceased.

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The following report of a case occurring in my practice will serve as an example of the class of patients in which I think this operation has especial advantages:

F. H., had two small hemorrhoids which prolapsed after each stool, bled freely, and were returned with difficulty and much suffering. He desired an operation, but stated that it was impossible to leave his business for any length of time. I excised his piles after business hours one Friday, and on the following Monday—or within sixty hours, during which he was more comfortable than he had been for a year—he returned to his duties, and on the day after, did an unusual amount of work without inconvenience. On Wednesday, five days after the operation, the wounds were entirely healed.

I am inclined to believe that, as our experience in the operation of excision widens, it will be found applicable to get other varieties of hemorrhoids than the one I have named.

Mr. Allingham is of the opinion that numerous cases are amenable to this treatment, and he regards excision as one of our best operations.

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A Case of Locomotor Ataxia.

BY J. S. GREGG, M. D., FORT WAYNE.

I have chosen this subject for the following reasons:

First—To impress upon the general practitioner, who, I have especial reason for believing, is generally unfamiliar with this as well as other affections of the spinal cord, the importance of a knowledge of the disease.

Second—To convey an adequate impression of the practical importance of an *early diagnostic recognition* of a disease so formidable, if allowed to progress beyond the formative stage before remedial measures are adopted.

Third—Because of the belief that the discussion of the subject by a victim of the affection under consideration will produce more permanent impressions than if presented by one who has not thus been peculiarly interested.

I will give briefly the history, symptoms and progress of my own case. During the latter part of the winter of 1879–80, while engaged in general practice, I became conscious of a form of paræsthesia beginning in the plantar surfaces of the toes and feet, and gradually extending over the dorsal surfaces, integuments of the ankles, legs and thighs, and reaching, in the course of several months, the perineal, gluteal and pelvic integuments. At first, for a time, this perverted sensation was mistaken for wrinkling of my hose, for removing which I sometimes took off my shoes. This partial anæsthesia of the skin differed in degree in various parts, resulting in a feeling of different degrees of pressure of the clothing, etc., over the various parts, such as tight bands around the lower extremities,

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irregularity of the surfaces of chairs, cushions, etc., on sitting, disagreeable tightness of the clothing in the perineal region, etc. Concurrently I became conscious of an unusual feeling of fatigue in the feet, ankles and legs, especially in the evening after the ordinary work of the day, if attempting to walk the distance of a few blocks. I then supposed this to be only a temporary debility.

Towards the close of the winter mentioned I began to experience a difficulty in maintaining steadiness of body while bending over a washbowl washing my face, which I attempted to relieve by leaning against the stand, wall or some convenient piece of furniture, or with one hand resting on some support. I experienced unusual difficulty in going about in the dark, in placing my feet in any particular spot, as for instance, on the step of my phaeton, unless I could distinctly see it. I could not stand steadily with my eyes closed and feet close together, nor walk steadily with my eyes closed. Inco-ordination of muscular action of the lower extremities was quite perceptible.

I can not now recall the fact (if such was the case) of suffering at that time from the lightning pains which soon subsequently became a prominent symptom, and which have continued to the present time, but with less frequent recurrences during the last year or two. Cystic paresis was indicated by diminished detrusive force on micturition, by frequent interruptions of the flow, and difficulty of completely emptying the bladder. Rectal and vesicular pains were sometimes experienced during and after micturition.

During the development of the above symptoms, I became conscious of a gradually increasing tendency to swaying or unsteadiness of gait, especially if somewhat fatigued, which, to avoid, required an unusual effort. This continued increasing until, after a few months, I found a stout cane necessary to enable me to walk in such a manner as to avoid the appearance, to some extent, of intoxication, of which my awkward and irregular gait was strongly suggestive. There was some degree of stiffness and pain in the joints of the lower extremities, especially of the knees, considered to be rheumatic in character.

During a few only of the earlier months in which the above

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symptoms were first recognized, a form of amblyopia, or apparently irregular mistiness of the atmosphere, rendering reading difficult, and objects generally indistinct, occurred occasionally—perhaps once in two to five days—continuing but for a short time, usually ten to twenty or thirty minutes. In the course of several months this symptom disappeared altogether.

Another peculiar ocular disturbance, which I first observed as early as 1876 or 1877 (and which I have not seen described by any author), was a fine, zigzag, bright line, in form like a miniature "worm fence," with a single shining rail, the line extending in a more or less irregular arc of about ninety degrees. This line was usually observed a little to the left of the focus of vision, and was constantly in a state of rapid oscillation, like that of the reflected rays of the sun from a bright surface during a hot day. This line was observable with the eyes either open or closed.

In frequency the intervals of recurrence were, for the first few years, from one day to two or three weeks, but during the last two years these intervals have been lengthened, sometimes to one or two months. Only once do I remember of its occurrence twice in one day. Its presence, for the time, renders reading or other close inspection difficult, but as soon as it passes off, which usually is the case in from twenty to thirty minutes, normal vision returns.

This was the first of all the symptoms of my affection—if in fact it be one of its symptoms—that attracted my attention. During the first year of its existence—long before any of the other symptoms I have described appeared—I consulted an oculist, but he could give no explanation. Neither of these two ocular symptoms has increased in severity since their origin, but the first has disappeared and the other improved, differing in these respects from nearly all the other symptoms.

No mystagmus or other motor disturbance of the eyes has occurred at any time.

During the latter part of the winter already referred to, I consulted several of my professional friends, both at home and in other places, but no one made a correct diagnosis, and con-

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sequently I failed to receive such treatment as might, at that early stage, have had some influence in at least arresting or retarding the progress of the disease.

In April, 1880, I consulted two eminent men in our profession, but who were not *specialists* in diseases of the nervous system, but they also failed in making a correct diagnosis.

During the spring and summer of 1880 most of the symptoms above described were gradually aggravated, rendering physical exercise more and more difficult. My gait became more swaying and unsteady, walking more fatiguing, steps more uncertain; going up and down stairs, getting into and out of my phæton, etc., became more difficult, requiring greater care to prevent falling. The lightning or lancinating pains which affected various parts of the lower extremities became more frequent and annoying. Aching pains in the muscles of the back, simulating lumbago, were aggravated, especially by exercise, and also by lying in bed for several hours. On walking, my body seemed too heavy for the lower extremities to support comfortably; or, the sensation was like that caused by carrying a heavy burden.

There was loss of the patellar tendon reflex, no doubt, at a very early stage, but was not discovered until the ataxic symptom had made considerable progress; plantar anæsthesia as well as paræsthesia of that and other surfaces was quite marked during the earlier months. No degree of analgesia, perhaps, existed, but a very marked retardation of perception of pain. Pressure applied to the foot, for instance, which was at first only perceptible by the sense of touch, after a few seconds became painful in effect. The prick of a pin would at first be recognized by the sense of touch or pressure, but not as a painful sensation until after the lapse of several seconds; and the cessation of this realization of pain seemed equally tardy.

In August, 1880, I consulted an eminent specialist in mental and nervous affections, who readily diagnosticated my case to be locomotor ataxia, and who prescribed a solution of strychnia in dilute phosphoric acid, and iodide of potassium in five grain doses, increased to twenty-five, together with galvanic faradization, the massage and absolute rest. Later in the fall I

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spent several weeks in a sanitarium, where I was treated with electro-vapor baths, hot and cold applications to the spine, galvanism and the *massage.* The only benefit, apparently, resulting from this treatment, was the relief of the pains and stiffness in the joints, and that which rest and cessation from professional labors would naturally induce.

During the following winter (1880–1881) the co-ordinating power of the lower extremities, and, with it, muscular strength and endurance, continued very gradually to diminish, rendering walking more unsteady and difficult, especially during the presence of ice or snow on the ground.

The tight, girdling sensation which had been experienced in the lower extremities was felt about the abdomen and waist.

During the summer of 1881, increase of disability was but slight, so that I continued to perform a moderate amount of professional labor, avoiding night calls as far as practicable.

During the following autumn and winter (1881–2), my locomotive powers failed somewhat more rapidly, rendering it necessary, towards spring, to resort to the use of one crutch, in addition to the cane I had so long used.

In May, 1882, I consulted our esteemed fellow of this society, Prof. Isaac C. Walker, who advised the resumption of the use of iodide of potassium, which had been discontinued for a long time, in gradually increasing doses, until seventy-five grains were reached, taken three times a day. This was done, commencing with ten grains, and increasing one grain daily till the maximum dose was reached, which was continued for several months, together with quinine and some of the other tonics, with more or less regularity. No improvement, however, in the symptoms being manifest, the treatment, especially the iodide, was discontinued.

On the recommendation of Prof. Walker, nitrate of silver was used for several months. This, I think, was before the use of the iodide as recommended by him.

By the early spring months of 1883 (which season of the year, especially during cold, damp weather, seemed more unfavorable for my case than even mid-winter,) I found it necessary to substitute another crutch for the cane, thus using a pair.

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In April of that year I suffered from my first attack of gastric disturbance, which is not an unfrequent symptom in this disease. This occurred after a fatiguing ride to the country, and returning in the face of a cold rain. An attack of indigestion followed, attended with nausea and vomiting, and a degree of vertigo, rendering it necessary for me to remain in bed for several days. These symptoms in a much milder degree, have recurred but three or four times, and were of shorter duration.

After recovering from the first attack of this gastric trouble, there was little change in my condition during the following summer, except, perhaps, a slight increase in the degree of disability; and during the winter of 1883-4 the ability to go about was still more impaired, probably owing to some extent to the greater effort required on account of snow, ice and inclement weather.

The circulation in the extremities seemed somewhat impaired, requiring extra care to keep them warm. During the last two years there has been at times, especially during the cold, damp weather of the autumnal and spring months, a disagreeably cold sensation about the surface of the chest, similar to that which would be caused by enveloping it in a broad, cold, wet bandage. Lightning or darting pains have sometimes been experienced in the walls of the chest, usually like a sudden "stitch in the side," not of so frequent occurrence, but of somewhat longer duration, than in the lower extremities.

About four years ago there began to be experienced a slight degree of anæsthesia and paræsthesia in the tips of the index, middle and ring fingers of the left hand, indicating some affection of the radial nerve (instead of the ulnar, which occurs as an early symptom in some cases). This did not seem to extend further for about two or three years; but since that time there has been a gradual extension of the affection to all the fingers of both that, and also the right hand, and in some degree over the entire hands themselves. The sensation is similar to that form of anæsthesia experienced after the handling of a strong solution of carbolic acid. The sense of touch is quite considerably impaired, and consequently delicate manipulations, depend-

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ing for their accuracy upon the acuteness of that special sense; for instance the handling of a pin, or button, if small, where the movements cannot be guided by the sight, are seriously interfered with. The impairment of the sense of touch in the ends of the fingers is such as to produce the impression of *roughness* when rubbed over a smooth surface; for instance the smoothest skin feeling like *cutis anserina*. While there is no impairment of sensation in the upper extremities except in the integuments of the fingers and hands, there is at times more or less unsteadiness and uncertainty in their movements. There is difficulty in writing, and sometimes it is almost impossible to do so legibly. In lifting a cup or glass filled with fluid, a portion of it is apt to be spilled; and if an attempt be made to move it for any distance without watching, the hand is liable to rotate and spill the fluid, and sometimes the glass to fall unless assisted by the other hand.

The so-called "muscular sense" of some authors is partially lost, although not to the extent in the upper extremities that it is in the lower.

Two or three years ago the jolting caused by riding over a very rough road, caused quite acute pain in the lumbar region, but for the last year or two this has almost subsided. The lumbago-like pains which had for a long time affected the muscles of the back after lying in bed for several hours, ceased to affect me, and now my sleep is less frequently interrupted. The sphincters, which are liable to become more or less paralyzed in this affection, have in my case, thus far, escaped involvement to any marked extent, and the vesical and urethral irritation which was more or less annoying at times two or three years ago, has been much less severe for the last year; however, sometimes, especially if the rectum be distended with feces or flatus, micturition is rendered difficult or impossible for the time, probably owing, principally, to the paretic condition of the muscular coat of the bladder. I have never, however, had to resort to the use of the catheter except once while suffering from the severe attack of gastric disorder and vertigo, above described. This was probably rendered necessary on account of the presence of some degree of prostatitis, which seemed to exist at

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that time, but which soon thereafter subsided; and these symptoms have been less annoying since, than before. One of the rectal symptoms which has been more or less annoying since the fall of 1880, has been colicky or tenesmic pains, occurring more frequently during, and for a short time after defecation, and occasionally at other times.

Occasionally there has been an annoying feeling of disquiet, restlessness, or a "fidgety" state, in the muscles of the hips and lower extremities, often attended with quite severe aching pain, especially in the gluteal muscles after sitting for a considerable time.

During the severe winter just passed, I was obliged to discontinue almost entirely my outdoor labors, and remain within pretty constantly, especially during inclement weather; and I found the recumbent posture the most comfortable most of the time, in which position I did the greater part of my reading; and I also did much of my writing (with a pencil) in a semi-recumbent posture.

One other annoying and often distressing sensation which I have frequently experienced for the last two or three years at least, but have not been described fully by any of the authorities that I have consulted, is that of *falling*, when only a slight inclination of the body to one side occurs, especially in the dark; for instance, if while riding in a carriage, the wheels of one side become rather suddenly lowered, even but a few inches, from irregularity of the ground, the sensation thus started is exaggerated, sometimes producing the impression that the carriage is turning over. I have sometimes had to stop my horse before I could correct the delusion.

The prescribed limit of this paper will not permit me to enter into any extended discussion of the etiology, pathology and therapeutics of this disease.

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Ganglions, with Suggestions on Treatment.

W. H. MYERS, M. D., FT. WAYNE.

There is an old story of a punctiliously polite Greek, who, while in the midst of the solemn activity of the funeral of an infant daughter, felt bound to make his excuse to the spectators for bringing out such a ridiculously small corpse to so large a crowd. Small as the subject seems, I will submit to your consideration a few suggestions, with all possible respect.

I may safely assume that the audience which I am addressing is familiar with the pathological lesion characterized by a circumscribed cyst, situated along the course of a tendon, and called a ganglion. They are often met with over the flexor, but more frequently over the extensor tendons of the fingers, where they pass over the joints; they are also found elsewhere in the vicinity of joints. These swellings often give rise to much pain, and are accompanied by weakness in the part, and are filled with viscid-transparent fluid, resembling the albumen of egg, or rather jelly. If the cyst be circumscribed it is called simple; sometimes they are compound or diffused. They are usually the result of a slow inflammatory process. If the inflammation be of a higher grade than usually attends the effusion of serum, and the product is lymph, then the interior of the sheaths becomes studded with pedunculated growths and fringes. These are detatched by constant friction of the tendon to which the sac was connected, and fill the ganglions with hundreds of small bodies like melon seeds. They are fibrinous.

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A ganglion is not a neoplasm, it is merely a saculated expansion of the sheath of the tendon. Believing that you apprehend correctly the pathology, I deem it proper to impress upon your minds the importance of precision in the diagnosis, for in deciding upon a course of treatment, safe and efficacious, we must determine whether the primary communication be open or closed. If the cyst has become independent, powerful remedies may be employed with impunity: iodine, sulphate of zinc, or iodoform. These remedies we would not employ if the cyst communicated with a joint or tendonous sheath. We would not treat a congenital hydrocele as we would an acquired, for the tunica vaginalis is derived from the peritoneum. Thus, precision in the diagnosis must determine the choice and applicability of remedies, and I am sure we may ascribe much of the doubt and uncertainty in the treatment to the inaccuracy of our diagnosis. If the latter be correct, no difficulty will be met in the treatment; always bearing this in mind: that a ganglion when fully developed may be an independent cyst, disconnected, or it may be still connected with the cavity whence it drew origin.

This can be determined by observing whether the tumor can be slowly reduced by pressure, and if it reappear as slowly when the pressure is removed, the reduction and reappearance of the tumor must be gradual. If it vanish suddenly, it is not due to evacuation and refilling of the cyst, but to reduction "*en masse.*"

The treatment suggested by various authors:

1. Stimulating friction and blisters.
2. Compression.
3. Seton.
4. Puncture, followed by compression.
5. Rupture.
6. Acupuncture.
7. Extirpation.

This list reflects the difference of opinion entertained by surgeons as to their mode of treatment. The list of remedies and different treatments for the ovarian cyst was as diverse, but at last the proper treatment was slowly evolved—excision. Is

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it not possible that these smaller and simpler cysts may be most successfully dealt with in the same way? So thought Sir Wm. Ferguson, in 1870, when he wrote in his System of Practical Surgery: "Surgeons have probably erred in being too cautious with incisions into such chronic collections. It seems harsh and cruel to make a large incision in the quiescent state of such swellings; yet I believe such a practice may be safest and best."

Skey has recourse to the knife, laying the sac entirely open, where subcutaneous puncture and the seton fail.

Mr. Bellamy, Charring Cross Hospital, treats the thin-walled cyst by pressure and puncture, but in other cases prefers free incision, pushing the knife straight into the sac, through the annular ligament and integuments, dividing these structures thoroughly; the contents are evacuated externally, and now applies pad and compress; rarely, if ever, the slightest inflammation supervenes, and the ganglion is thoroughly destroyed.

Spence, at the Edinburgh Royal Infirmary, when the cyst was dense, dissected the swelling out as a whole.

Dr. Gillespie, connected with the same institution, uses an exploring needle to rupture the sac, but prefers laying the sac freely open in the larger ganglion, such as those affecting the wrist and palm; if of long standing, has found nothing so effectual as laying them freely open, using antiseptic precautions and dressing.

Dr. P. Heron Watson treats the bursal tumor, occurring beneath the annular ligament, by opening it freely, observing antiseptic precautions.

Mr. Annandale treats a ganglion, containing seed-like bodies, by making a free incision into the sac, squeezing out all the contents and dressing the wound carefully according to the antiseptic method.

Dr. Joseph Bell, if pressure and puncture fail, excises the whole by free incisions, and reports no bad results.

Dr. George Buchanan resorts to excision, and says: "If the incision be managed with antiseptic precaution, so as to prevent putrefaction, the cure is rapid, and almost painless."

In Aberdeen the same treatment is pursued.

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Gentlemen, in Scotland you perceive that the antiseptic method has assumed a position so prominent in surgical practice as to compel the attention of all practical surgeons, and they have materialized their expressed opinions in their practical work in excising ganglia.

In England, and in the London hospitals, there is by no means the same unanimity on these subjects, for Mr. John Wood, King's College Hospital, treats ganglionic cysts by thrusting a spear-shaped needle into the cyst, transfixing it again and again. The contents are thus enabled to escape into the areolar tissues; iodine externally applied over it; a thick pad; firm pressure with the bandage. He claims that suppuration never follows this plan, and that repetition is seldom necessary.

Mr. Henry Smith believes the most effectual treatment is by the seton. A single thread is passed through the cyst and allowed to remain three days or one week, and is withdrawn when suppuration supervenes. Success is reported almost invariably.

Mr. Rogers Bell punctures with a grooved needle, afterwards applies firm pressure.

Sir Henry Thompson, at the University College Hospital, passes through the ganglion, carefully, a double thread of silk; allows the thread in three days.

Mr. Christopher Heath is in the habit of puncturing with a grooved needle and evacuating the contents by pressure, and applies iodine for a few days.

Mr. Campbell D. Morgan, at the Middlesex Hospital, lays open the large ganglions in the palm of the hand; the smaller one he cuts sub-cutaneously, and applies pressure.

At St. Bartholomew's Hospital, Mr. Thomas Smith has had no experiences of injecting, excising, or passing setons through ganglionic cysts, but believes in subcutaneous section of the entire cyst wall.

Mr. Poland, at Guy's Hospital, pursues a similar treatment, and in a few cases only was he compelled to lay open the ganglion by free incisions.

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Mr. House, of Guy's Hospital also, resorts to puncture and subcutaneous diffusion of the contents with pressure, but such tumors as are complicated by the presence of millet-seed bodies, these are, he thinks, best and most expeditiously treated by excision of the cyst in the antiseptic mode.

Dr. Barton, of the Adelaide Hospital, passes a silver wire through the ganglion and punctures with a grooved needle.

Dr. B. Willis Richardson opens subcutaneously with a fine tenotomy knife, and applies pressure.

Mr. Gay, at the Great Northern Hospital, London, uses the seton, and reports it as uniformly successful, while Henry Lee, at St. George's, and Mr. Lawrence, at the Middlesex Hospital, resort to pressure, puncture and compression, and deprecate the use of the seton. Mr. Adams transfixes the sac freely with a tenotomy knife and applies firm pressure; also, believes the seton to be perfectly safe and reliable.

At St. Mary's Hospital Mr. Gascoyen does not use the seton, treats the cyst subcutaneously with the tenotomy knife, and deprecates excision.

Mr. Francis Mason and Mr. Holthouse, of the Westminster Hospital, apply first pressure, failing, they pass a single thread through the cyst and remove it upon the supervention of inflammation. Mason condemns excision.

The practice in Ireland may be illustrated by referring to the practice of Dr. R. Adams, at the Richmond Hospital in Dublin, Drs. W. Colles and R. McDonald at Stevens' Hospital, and Mr. Ledwick at the Mercer. This consists in evacuating the contents of the cyst with a knife or surgical needle, applying a compress immediately afterwards and placing the hand on a splint. Ledwick alone uses the seton when the puncture fails, and injects with iodine, using a hypodermic syringe for that purpose.

If we consult the works of authors on surgery we are taught by Erichsen to use the seton; so also by Agnew. Gross, after recommending subcutaneous division and compression, says that "both excision and direct incision must be avoided, as they are liable to cause erysipelas and to endanger the func-

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tions of the part," closing with the impressive remark: "Excision is fraught with great danger." Drs. Post, Sands, Stinson, Peters, Weirs and Smith teach the same doctrine.

In reviewing the field passed over you will discover that the authorities show great unanimity in opposing excision with one exception only, the Scotch profession.

While you remain upon the plane of subcutaneous incision, the seton and pressure, with iodine injections, you are sustained by authority.

When Vesalius took the lead as a genuine teacher of anatomy at Padua, accused Galen that his dissections were performed upon animals and not upon the human body, it cost him his position at the University, for Galen was *the authority.* The dark ages were not yet over. In medicine, authority annually slays millions; its pernicious effects upon human life are seen and felt in every direction. It has kept the world in a state of intellectual bondage from the earliest records of society down to the present moment. The future will throw authority overboard, and the question will not then be asked what our predecessors thought to be best.

I am opposed to pressure, for if any proportion of the contents be allowed to remain in the sac, the sides cannot be brought into contact and the disease will return. Still another explanation may be offered as a cause of failure; in the earlier stages the cyst is placed upon the tendon, and is limited to the tissue lying between it and the skin growing in the direction of least resistance; pressure will cause the cyst to extend around and beneath to its under surface, and you can not keep the opposing surfaces in contact and secure obliteration, as it is impossible to secure perfect and complete immobility. The slightest movement of the hand or fingers will detach the united surfaces and the disease will return. I am opposed to injection unless the cyst be independent and completely disconnected from the sheath of the tendon, or if the cyst contain cartilaginous bodies, for if the injection should pass into the tendon and there excite inflammation, adhesions would occur and permanent impairment of the movements of the hand or fingers would result. The same objections—adhesion and suppuration—may be urged against the use of the seton unless the

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cyst be independent. Subcutaneous incision is the least objectionable of the methods mentioned, but in the majority of cases we are unable to empty the cyst, and if we fail to do so, the disease will recur.

When called upon to treat a ganglionic cyst, I determine the age and strength of the wall by pressure with my thumb; if I fail to rupture the cyst by this procedure and am satisfied after a careful diagnosis that it is independent, I puncture with a tenotomy knife, and by pressure diffuse the contents into the cellular tissue and apply compression; but if it is not independent, communicates with the sheath or joint, or if cartilaginous masses be present, I purify the skin in the neighborhood of the ganglion; this purification is carried out by washing with 1-20 carbolic lotion, the antiseptic being allowed to act for some time; afterwards apply a towel soaked in 1-20 solution, and allow it to remain on the part one hour or more before the excision is attempted; I give the patient a hypodermic injection of brandy, administer ether, then apply an Esmanch bandage to free the part of blood and prevent its return by Levis' tourniquet. The wound is made with a sharp knife and quickly done, the interior of the cyst emptied of its contents and washed with a carbolic lotion of 1-20. The edges of the wound may be brought together with copper wire; over this apply an aseptic dressing; a piece of protective is now interposed between the wound and the carbolic gauze in which the part is enveloped; eight or ten thicknesses being used. Over this a piece of oiled silk of a size sufficient to cover considerable space beyond the gauze. In fixing the dressing I use a very light and cheap rubber bandage. This dressing at its edge may be fastened with pins and need not be changed for three or four days, and when changed is to be re-applied as before.

I have adopted this course for the last five or six years, and have never witnessed the cellulitis detailed by some of the authors quoted; no recurrence nor impairment of the hand or fingers ever ensued. I could give numerous cases in detail if time permitted, but I concluded to state the results rather than individual experiences. So satisfactory has been excision in my hands that authorities no longer deter me from operating in any case, the exceptions having been indicated.

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Tumors of the Breast.

BY S. C. WEDDINGTON, M. D., JONESBORO, IND.

[Read before the Grant County Medical Society.]

Tumors of the breast are common, and present great diversity. They occur, generally, in the breast of the female, though they do sometimes occur in the breasts of males. The functional importance of the female breast, the size and activity of the mammary glands of the female during lactation, and its close sympathetic relation to the reproductive organs, render it very liable to diseased conditions and abnormal contents. The tumors or internal abnormal enlargements of the breasts are variously classified.

They may be divided into inflammatory and non-inflammatory, into fluid and solid, and into malignant and non-malignant growths or accumulations. The inflammatory varieties are acute and chronic mastitis, resulting often in abscesses. On these varieties I do not propose to dwell. They are not usually called tumors; may contain pus, milk, water, non-coagulating serum, coagulating serum or blood. Those containing pus are the inflammations which we are not now considering. Those containing milk, and called galactoceles, occur during lactation and are caused by rupture or obstruction of lactiferous ducts. There may be one or several in a breast. They are round, firm, smooth, and not painful or tender, and are known by their connection with lactation. They are generally small, but may become large enough to contain a quart of milk. The remedy for them is to open them, remove the contents, and allow them to heal by granulation.

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Those containing water, or thin, clear non-coagulating fluid, are hydatids or entozoon cysts. They can not be distinguished from other cysts, except by the character of the fluid contents. They are very rare. Extirpation is the readiest means of cure. Cysts sometimes form, which contain a brown or greenish fluid, non-coagulating, opulescent, greasy, containing oil globules. These do not occur during lactation and are rarely painful or tender. They are generally single, but sometimes multiple. Evacuating the fluid will cause them. None of these are malignant or of serious import. The most common cysts are those called sero-cysts. Those contain a coagulable fluid, which may be clear, with a yellowish tinge or turbid, containing blood or other coloring matter.

These cysts are circumscribed by a fibrous membrane, and if the fluid is removed the cyst soon refills. They are sometimes connected with, or contain, malignant growths. Nevus or vascular tumors may form in the breast as well as elsewhere. Such cases are rare and are known by the same symptoms and subject to the same treatment as elsewhere.

What Birkett terms fibro-plastic tumors are sarcomata or new growths more soft and fibrous than adenomata. They seem to be similar to adenomata, except that there is a preponderance of a different tissue, the adenoma resembling the gland structure, but the fibro-plastic being made up principally of fibrous or connective tissue. These tumors are not cancers, but they are apt to be malignant; that is, they are apt to grow again after removal. These are what some have termed semi-malignant tumors. Their treatment, when treated at all, is complete excision; but if the diagnosis is clear it is often a doubtful point whether they ought to be removed or not. If not increasing very rapidly, and not causing much suffering, it may be better to let them alone, because they often grow again after removal, and if they do so they generally grow much more rapidly and assume a more dangerous type.

Carcinomatous are the most important, because the most dangerous tumors. They have been variously classified by different writers. Some have divided them into scirrhus, encephaloid, colloid and epithelial. Others into infiltrating, tuberous

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and colloid; but probably they are all of the same nature. The Greek, carcinoma; Latin, cancer; French, cancre; German, krebs; all meaning the same thing—all meaning a crab; so called because it is supposed to be a parasitic growth with branches or roots extending into the surrounding tissue, like the limbs of a crab; consists essentially in the deposit or infiltration of cancer cells between the fibers or parts of the normal tissues, attended, sometimes, with increased prolification of the connective tissues of the part. The cancer cells are said to be only the normal epithelial cells, which, through some unknown cause, increase rapidly and out of place. But I think it may be possible and, indeed, probable that they are of a specific character and autogenetic. These cells soon spread through the adjoining tissues and enter the lymphatic vessels and the blood vessels, and the impossibility of eradicating all of these cells constitutes the impossibility of curing cancer.

Cancer in the breast may occur at any age, but is most common between the ages of thirty and fifty years. Sometimes it runs its course rapidly and proves fatal in a few months, and sometimes its course is very slow, existing, it may be, for twenty or twenty-five years. Different cases differ much in appearance. In some cases the tumor becomes large, in others it remains small; in some it is of almost stony hardness, in others it is soft; in some cases ulceration commences early, in others late; in some cases the glands, the skin and the constitution are affected early, and in some cases not until a late period. The symptoms, appearance and rapidity depend in a great measure on the composition of the tumor. In what has been termed the scirrhus or infiltrating variety there is an excess of fibrous or connective tissue, and a sparseness of cancer cells. This variety is chronic in its course and usually very hard, and it often contracts like cicatricial tissue, changing the shape of the part and causing a puckered appearance of the skin. This variety does not grow large. The encephaloid or tuberous variety grows much more rapidly and much larger. It is soft and commences as a soft tumor, freely movable at first, but becoming firmly attached to the surrounding structures. This variety, after ulceration, often throws out fungus growth called

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fungus hematodes. In this variety there is little, if any, prolification of fibrous tissue, but an abundant prolification of cancer cells. Round cells are most common in scirrhus, squamous cells in encephaloid and epithelioma, and columnar cells are often found in cases which commence in the ducts of the gland. Infiltrating cancer sometimes commences in the skin, generally in the areola, and often preceded by an eczematous condition of the nipple. Such cases do not cause much swelling, but ulcerate early and run a rapid course. The different varieties of cancer are not generally attended with tenderness or much pain at the commencement, but there is occasionally lancinating pain and pain after being handled, and as the disease progresses toward the last stage the pain becomes constant and excruciating. They are all attended during their course (unless prevented by removal) with brawny skin, ulceration, swelling of lymphatic glands and cachexia.

The treatment for any variety of cancer in the breast is complete extirpation; provided, that the diagnosis can be made early enough. For extirpation to cure all cancer cells must be removed. If any of them are left they will soon multiply again; and as they are soon deposited in the surrounding tissues the operation must be thorough; and then there is always danger that the disease will not be entirely eradicated. Prof. L. A. Sayre advises after the removal of a cancer the continued use of arsenic to prevent the subsequent growths; but whether this will prevent it or not I am not prepared to say. After the constitution has become affected, the lymphatic glands and probably internal organs implicated, a cure is almost hopeless in any way. If only a few glands are implicated, and they are removed at the time of operation, a cure may be possible, although not probable. As to the propriety of an operation after the skin and glands are implicated and the cancerous cachexy has been revealed there is some difference in opinions, and each case must be treated on its merits. In some cases an operation, as a matter of palliation, may be proper. As a means of removal the knife is decidedly the best. Caustics are more tedious, more painful, and allow more time for mischief to be done before the disease can be eradicated. Success de-

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pends upon early, prompt and thorough extirpation. There must be no delay; no waiting for developments; no half-way measures after the diagnosis has been made. One day might make the difference between success and failure. The case that might be cured to-day by complete removal might become incurable before it could be removed under the slow operation of caustics. The point of greatest importance, and, unfortunately, the one of greatest difficulty, is to make the diagnosis early enough. To make the diagnosis we must take into consideration the age and condition of the patient—the history and all the symptoms of the case. Inflammation, abscess, milk cyst, water cyst and some varieties of solid tumor may be diagnosed satisfactorily, thus excluding cancer in many cases. Hereditary influence is supposed to be important, and a history of cancer in the family, or no such history, may throw some light on the case. Many of the characteristics of cancer are conclusive; but, unfortunately, they come too late, or they at least require very prompt action after their appearance. One of the most characteristic features of cancer arises from the infiltration or deposit of the cancer cells among and between the fibers of the normal tissues. This renders scirrhus exceedingly hard and causes lancinating pains from the compression of the nerves. In scirrhus there is also prolification of the connective tissue, increasing the size of the tumor and resulting in contraction, with puckering of the skin, with increased hardness and pain. These appearances when they occur are diagnostic of cancer. When the skin is implicated it becomes hard, rough, red and brawny. This may occur at the commencement or at any time during the progress of the case. This differs from the redness of ordinary inflammation, and is generally characteristic of cancer. The glands of the axilla and neck generally become implicated about the time that the skin does, or soon after. The glands generally enlarge during any inflammatory or suppurating disease of the breasts; but the enlargement from this cause is attended with the symptoms of inflammation, while that of cancer is not, and the swollen glands are tender and painful and the swelling comes on rapidly; while glandular enlargement from cancer comes on more slowly and the glands are hard, but

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not painful or tender. By this difference the cases can generally be distinguished from each other. Retraction of the nipple has been thought by some to be characteristic of cancer, but this can not be depended on. It is sometimes absent in cases of cancer, and sometimes present in other cases. Any tumor involving the milk ducts is apt to cause retraction of the nipple, while those which do not involve these tubes are not attended with such retraction, whether the case be cancer or not. When lymph or bloody water escapes from the nipple or can be pressed from it, the case is probably cystic, connecting with the lactiferous tubes, and is not usually cancerous. Eczema of the nipple sometimes seems to be the starting point for cancerous infiltration of the skin, which usually runs a rapid course.

Tuberous or encephaloid cancer commences as a soft, round tumor, which usually runs a rapid course, and soon becomes attached to the surrounding tissue. I said that the most characteristic feature of cancer is the result of the deposit of cancer cells within the normal tissues. In this way the branches, or what is usually termed the roots, soon penetrate and extend into surrounding parts. The tumor may at first seem soft and freely movable, but as it enlarges it becomes firmly attached to the surrounding parts; often to the pectoral muscle. This is the earliest and best diagnostic sign. If a tumor has formed no attachments there is reason to think that it is not cancerous. If it has formed attachments there is reason to think to the contrary. In operating on such a case, the parts to which it is attached should be liberally dissected away, if such a course is admissible. Our method of diagnosis and one that can be used to advantage, not alone, but in conjunction with others, is the removal of a small portion of fluid from the tumor and an examination of this with the microscope. There is no appearance of cells or of tissue which is pathognomonic of cancer; but certain forms are usually found. In scirrhus the tumor is usually infiltrated with what are called round cells; and the stroma or abnormal fibrous tissue often contains what are called spindle cells. In tuberous or encephaloid cancer, what are called giant cells are usually found, often cuneate in shape,

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and containing many nuclei and nucleoli. Such cells, when found, are strong presumptive evidence of cancer; but they are not always found, and as a great many medical men are not experts with the microscope, and some have no such instrument, this test is not always available. This is an important means of diagnosis in the hands of an expert with a good instrument. While a cancer is running its course the symptoms of what is called cancerous cachexy, sooner or later make their appearance. The patient becomes thin, pale and languid. The skin has a sort of shriveled appearance and a yellowish hue. This, when it occurs in connection with other symptoms of cancer, is tolerably strong confirmatory evidence, but it is then unfortunately too late, as a general rule, for treatment to be of any benefit. Age has some bearing on the question of diagnosis. Cancer usually commences somewhere between the ages of 30 and 55 years; but many other tumors of the breast are most frequent during the same period. It is thought that any tumor of doubtful character commencing between the ages of 35 and 55 should be looked upon with suspicion. The removal of a tumor from the breast, or even of the entire glands, is not generally a dangerous operation, and under anæsthesia is not painful. I think it would be better that twenty benign tumors should be removed, than that one malignant one which could be cured by operation should be neglected. But we should never forget that to make a cure possible the operation must be made early. The cancer is probably local at its commencement, but after the system shall have become contaminated, an operation will be useless, or worse than useless. In a suspicious case we should use every means in our power to make a correct diagnosis, and conclude either to operate early, or not to operate at all. To wait for further developments is to run a great risk if the case should be malignant. To wait for unequivocal signs of cancer is to cut off all hope for the patient. It is a serious matter to subject a patient to a frightful and somewhat dangerous operation unnecessarily. It is more serious, if not criminal, to doom a patient who has confided in our judgment to a tedious, painful and inevitable death through our timorousness, carelessness, or lack of attainable

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knowledge. He who says I am satisfied that the case is cancer and ought to be removed, but would advise waiting until the signs are unmistakable, assumes a fearful responsibility.

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ASIATIC CHOLERA.

BY J. J. GARVER, M. D., INDIANAPOLIS.

INDIANAPOLIS, April 14, 1885.

Mr. President and Gentlemen of the Marion County Medical Society:

The subject for consideration this evening is Asiatic cholera. The true definition of cholera is an acute infectious disease, endemic in some localities, epidemic in others; characterized by vomiting and purging of a peculiar rice-water like fluid, and a condition of collapse and death, or of a reaction from collapse and the development of the typhoid state; known also as epidemic cholera, Asiatic cholera, malignant cholera, cholera morbus, and blue and spasmodic cholera.

IS THERE A CHOLERA GERM?

It is highly probable that cholera is propagated by a minute organism. The theory which assumes the cholera-germ existence best reconciles all the facts; we therefore adopt it until the real cause is discovered. When epidemics of cholera commenced their march around the world they, according to many authorities, pursued no defined course, spreading in all directions, and it is conveyed by ships, streams of water, clothing, baggage, air, etc. One of the principal sources of cholera infection is the water supply. In 1830–31 the great Russian epidemic was continued through the winter, although it is true that heat greatly favors the spread of cholera, and it is also a fact that the greatest mortality occurs during the hot season.

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The weather has a powerful influence over cholera epidemics. Dr. N. S. Jarvis (U. S. Army, in Southern Hospital Reports, vol. 1, p. 436, of 1849,) says: A northerner, with rain, preceded a fearful outbreak of cholera among the United States troops (the Eighth Infantry) at Lavacca, Texas. Ziemssens' Cyclopædia also states that in 1849, after a wet spring, cholera reached a fearful degree of fatality in the first eight days of June, there being between eight and nine hundred new deaths each day. The same observations were reported of the Vienna epidemic in 1849. Professor Bartholow, who attended the cholera patients at the hospital in Cincinnati, during the last epidemic, also states that a hot, moist, stagnant atmosphere is especially favorable to the development of the epidemic influence, and in fact the majority of authorities agree that the months of July, August and September are the months of the greatest prevalence of the epidemic. More persons are attacked during the early morning hours than at any other time. This is supposed to be due to the greater concentration of the poisonous atmosphere near the ground at that time. Dr. Adams, of Scotland, and Drs. Morehead, Martin and others, of India, consider the early morning the most dangerous time for attacks of cholera. The dry months are the most fatal in Bengal, as is shown by the Commissioners' reports of 1861. Perhaps the greatest outbreak which so startled the entire world and ravaged Jessore in August, 1817, was in the midst of the wettest seasons known. Jessore, a city northeast of Calcutta, lost 10,000 inhabitants, who fell victims to cholera in sixty days. This was the first commencement of that fearful epidemic which has now for so many years spread sorrow and desolation over almost all the lands of the earth. During the year 1817 the whole English India was filled with cholera, and during the same year the number of victims is given by Ziemssens' Cyclopædia at 600,000. Again in 1818 cholera spread from Bombay to Calcutta, where it attacked General Hastings' army of 18,000 men. Nine thousand of his army were slain in a few weeks. The same year and time cholera passed over the high mountains of Hindostan and Nepaul, and raged in the mountain valleys 4,000 feet above the level of the sea with the same

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virulence as upon the plains. In 1832 cholera crossed the Atlantic Ocean, attacking North America, and in July of the same year New York was attacked; soon after Philadelphia and Baltimore. The next city was New Orleans, in November of the same year. Again in 1848 New Orleans was attacked with cholera from Europe direct, and not from the North, as was the case in 1832. In 1854–55 the United States was again visited, when a considerable portion of our country was visited with the much-dreaded disease. In Europe, in 1866, during the German-Austrian war, where it attacks all, the pandemic character of cholera, as described by Zehnder and Biermer, who are excellent authorities, state that more Prussians were killed by cholera than by battles.

Recent investigations prove that cholera is as old as the human race in India. Hence, it is justly named when called India cholera. According to all authentic reports (and they are innumerable), the combination of heat and moisture, when the air is moving slowly, or not at all, is certainly favorable to the spread of cholera. Mr. Thom, of India, a very careful observer, reports that the great outbreak of cholera at Kurrachee, in 1846, that the dew point was very high, 83°, with the thermometer at 96° in the shade, inducing a sense of languor and oppression, a stifled feeling about the respirations, and inability to undergo the least fatigue. Cholera appears to travel with the wind in many instances, but it does not always do so. Orton reports that it traveled across a great variety of country directly opposed by a strong wind blowing night and day for six months. After having consulted many different authorities, I think that there is sufficient evidence at hand to prove that foul atmosphere promotes the severity of cholera, notwithstanding many foul and filthy places escape cholera entirely. The nature of the soil seems also to wield a powerful influence in cholera epidemics. Dr. McClelland states that stiff clayey soil has shown up a higher mortality than loose, sandy and easily drainable ground. Dr. Lorimer says that nearly half the epidemics took place on black cotton soil. Pettenkofer states that the soil best adapted to the nurture of

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cholera germs, because it retains the surface water, where the ground water is low the germs are produced in greater abundance than where it is high. It seems to me that cholera spreads rapidly where drinking water is supplied from surface drainage, because richer in organic matter. Personally, I do not believe that the above authorities that I have just quoted on the nature of the soil, would hold good in our own country, at least a greater part of it. For all of us know that Cincinnati is located on hills which are gravel and sand, so easily and quickly drained; New Orleans is located on low, flat, black sandy cotton soil, and is surrounded by the great bend in the Mississippi river and the lakes on the northwest, so that the city being lower than the river, and therefore very difficult to drain either by sewerage or otherwise; and yet her mortality is but a trifle higher than our sister city of Cincinnati, whose sewerage system is one of the best in the country by reason of sufficient fall and nature of soil.

In London the lower elevations were most fatal, and as the height of the locality increased the mortality decreased.

Cholera is less prevalent in mountain elevations than on low levels, as is shown by the careful review of Dr. Chevers on "Means of Preserving the Health of European Soldiers in India." Impure air and foul atmosphere promotes the severity of cholera. For proof of this can be shown by various reports of the Board of Health on English epidemics, and also by reports from the health reports of Cincinnati during the cholera epidemic in 1866.

The hygienic influences affecting the individual are important to look after. Great differences in the individual susceptibility are found to exist. Lebert says: "I was myself present during the entire four months in the city of Berlin; the mortality was not severe, as only 2,500 deaths occurred out of 200,000 inhabitants." And states as his opinion that the low mortality was due to the cheerful disposition of the people having no fear of the disease. The period of incubation usually lasts from two to four days on an average; it does not exceed one week. Pettenkofer's statistics state that the period of incuba-

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tion is three to six days. Bryden, who attended 611 cases, states that 10 per cent. of that number were attacked with cholera inside of eleven days, and the severest cases in three days.

The general manifestations of cholera, and especially of the severe forms, not unfrequently begin precipitately without previous diarrhea. Cholera diarrhea has the one peculiarity, simply that it occurs without warning in a large number of cases. Patients feel weak and uncomfortable, stools are painless, fluid and yellowish or brownish, often containing much desquamated epithelium and phosphates. One of the most positive signs of cholera, when the patient is suffering with diarrhea, is the suppression of urine, cramps in the calves, and colorless stools. Hence, during cholera epidemics all diarrhea should be promptly and carefully treated.

The first or prodromal stage during every epidemic of cholera a large number of cases set in by a diarrhea, others with vomiting and purging, like cholera morbus, and if permitted to go on assumes the characteristics of cholera. Diarrhea may occur from taking cold, errors of diet, undigested food, etc. There is some chilliness, thirst, and usually a bitter, mawkish taste. Stools pass with ease, which are copious, watery, and failure of strength. Soon cramps in the legs, cold tongue, cold breath, toneless voice, suppression of urine, etc. Many cases come on by mental depression. Fatigue of body and chilliness precede the regular attack. The second stage is said to come on with large evacuations, which announces the onset of regular cholera. The patient feels cold, weak and dizzy, and is glad to throw himself on the bed after one or two evacuations; then follows vomiting and purging. Some patients sink rapidly without vomiting or purging. Usually where vomiting occurs it is thrown up with great force and ejected some distance from the patient, then follows intense thirst, large amounts of water are swallowed and quickly returned, the tongue is white, pasty, and cold, the countenance shrinks, has a leaden hue, the eyes are staring, the nose pinched, and breath cold, breathing is oppressed, even difficult, and often troublesome hiccough comes on. Soon cramps are felt in the calves of the legs, and fre-

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quently cramps occur in the arms, hands, masseters, muscles of the back and abdomen; but much more severe in the calves than elsewhere; rapid fall of temperature. Soon the pulse declines in volume and force, becoming extremely small, barely perceptible, often ceases at the wrist, and the action of the heart can hardly be recognized. The surface is cold, and is covered with a sticky perspiration; skin wrinkles, with the nose and lips blue and cold; eyes sunken, with livid or black rings; the tongue is now like ice, and breath cold; voice is weak and husky; urine entirely suppressed. The state of collapse may last from ten to forty-eight hours. Under such circumstances, death usually follows. The average duration of fatal cases is about fifty-eight hours, and of cases that recover, about nine days. Death does not often occur within the first eleven hours, but there are exceptional cases where death occurs sooner. The stage of reaction, which precedes the typhoid, may lead to speedy convalescence. Should the typhoid state set in then convalescence is retarded some five to six weeks. The mortality of cholera averages fifty per cent.

TREATMENT.

Many formulas are given by every authority on cholera, hence I give but few, believing that every case should be treated according to the severity of the attack and symptoms present. Mustard to the epigastrium, carbolic acid to relieve vomiting; also hydrocyanic acid, tr. of camphor, chloroform, nitrite of amyl, chloral and chlorodyne. As there are a large number of chlorodynes of different formulas, and representing strengths unkown to many physicians, I will give you the correct formula of Chandler's chlorodyne, the best in the market. This formula I know is correct as I obtained it from their own chemist.

℞

Morphia muriat	gr. viii
Fld. ext. cannabis indica	dr ss
Oleum piper niger	gtts x
Tinct. capsici	gtts xv
Chloroform	dr. ii
Alcohol	dr. i
Glycerine	dr. i

M. S.—Ten to thirty drops, in water, to an adult.

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Also hypodermatic injections of morphia and atropia; $\frac{1}{6}$ grain of morphia and 1-20 grain of atropia. Hypodermic injections of brandy or whisky is good when stomach fails, as it often does, to absorb stimulants of any kind. Very little food is necessary, as the digestive powers are so feeble that it is useless to give anything except hot milk or broth. Cleanliness, good ventilation, good drinking water, which should be subjected to thorough boiling, food of a good quality, all articles used, such as dishes, night vessels, beds, washing-rooms, should be disinfected. Carbolic acid is given first place as a cholera disinfectant. Warmth to the body, bottles of hot water and every means to keep up body heat. Absolute rest in bed. Opium is the only agent that has in general a real preventative character in cholera diarrhea, and especially in obstinate forms. As authorities differso widely in treatment and formulas, I leave the matter open now for free discussion.

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TRANSACTIONS

OF THE

INDIANA STATE MEDICAL CONVENTION

AT THE

THIRTY-FIFTH ANNUAL SESSION.

FIRST DAY.

INDIANAPOLIS, INDIANA,
MAY 12, 1885, 10 O'CLOCK A. M.

The Society was called to order by the President, Dr. Woodburn.

Prayer by Rev. Reuben Jeffries, D. D.

The President—The first business before the Society is the calling of the roll.

The Secretary—Mr. President, the roll is prepared so far as the Societies have reported, but quite a number of delegates will come in between this and 2 o'clock and I propose we postpone the roll call until afternoon.

Taken by consent.

The Secretary—GENTLEMEN OF THE SOCIETY:

I am requested by the President to announce the following members of the Committee on Credentials:

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S. H. Pearse,
C. B. Stevens,
W. H. Thompson,
I. N. Kithcart,
W. H. Wishard.

The Secretary—And also the Committee on Finance, which is as follows:

Benj. Newland,
S. Ferris,
C. W. Burket,
S. E. Munford,
E. Hadley.

The President—Is the Committee on Arrangements ready to report?

Dr. Oliver, of Indianapolis—The committee desires to make the following report:

Mr. President and Members Indiana State Medical Society:

Your Committee on Arrangements desires to make the following report:

A liberal reduction in railroad fare has been obtained, and certificates sent to all applicants for same. The hotels have made favorable reductions in their prices. The committee prepared a circular containing these arrangements and a partial programme and mailed one to each member of the Society. The expense of holding the annual meeting has been lessened each year by a voluntary contribution of $25 on the part of drug and instrument exhibitors, in acknowledgment of which your committee has seen fit to publish the names of said exhibitors on the programme.

The following is the bill of expenditures:

Rent of Plymouth building	$100 00
Printing 1,500 four-page circulars	5 75
Printing 400 railroad certificates	6 75
Printing 600 programmes	6 50
Envelopes	2 10
Stamps	2 25
Decorations	5 00
Water coolers and ice	4 45
	$132 80

The whole amount expended by your committee. All of which is respectfully submitted.

JOHN H. OLIVER, M. D.,
G. W. WOOLLEN, M. D,
J. A. SUTCLIFFE, M. D.,
T. N. BRYAN, M. D.,
F. C. FERGUSON, M. D.,
Committee on Arrangements.

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On motion the report of the Committee on Arrangements was received and approved, and the financial part referred to the Committee on Finance.

The President—The next item on the programme is business requiring early attention. We are not aware of any such business now and will skip that portion. We will now have the report of the Secretary, Dr. Elder.

The Secretary read his report as follows:

SECRETARY'S REPORT.

Mr. President and Members of the Indiana State Medical Society:

For the fifth time I have the honor to present my annual report to you, as your Secretary. At our last meeting I reported one thousand and six members having paid dues to that date, since which time I have collected dues from two hundred and eight members, making a total of twelve hundred and fourteen paying members last year, against eleven hundred and twenty-seven the previous year, a gain of eighty-seven members. I hoped to be able to announce the organization of several new societies at this time, but am unable to do so. Blanks for the organization of new societies have been recently sent to Harrison, Spencer, Shelby, Vermillion, Crawford, Laporte and other counties, but none have yet announced the completion of the organization. Warrick county has organized and the report is expected in a few days. Up to this time I have received this years' reports from fifty-three societies, leaving seventeen to yet report. From reports already received we note the following changes in membership:

Members admitted	79
Members expelled	3
Members died	15
Members removed	54
Members withdrawn	20
Members suspended	70
Members reported	1,050

Of whom 875 have paid dues.

I think that the depressed financial condition of the country has operated adversely to the financial interests of the county societies, yet it is confidently expected that the total number of the membership of the Society will not be reduced. Our Society was fairly well represented at the recent meeting of the American Medical Association. About forty physicians from Indiana formed a part of the total six hundred registered delegate members in attendance.

So far as I know the utmost harmony and kind feeling exists between this Society and her seventy auxiliaries and their members, and between the members of the auxiliary societies. Such a general good feeling prevails that but one case of appeal from the action of a local society to this Society has been taken. The papers in that case have been referred to the Committee on Ethics.

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Our Society appears to have reached the proportions of a strong, active, firmly established association of medical practitioners, whose influence, usefulness and proportions are constantly augmenting for good, and with the influences now surrounding our profession and State, we are confident that reputable medicine has brighter prospects than ever before.

Very respectfully,

E. S. ELDER, M. D.,
Secretary.

Indiana State Medical Society in Account with E. S. Elder, M. D., Secretary.

1884.		
Sept. 4.	To postage on 30 copies of Trans. sent to medical journals for review	$4 20
1885.		
May 1.	To postage on 76 copies sent to libraries, societies and foreign societies, journals, etc	11 40
" 1.	Postage stamps furnished Committee of Arrangements	10 00
	Postage in office work	4 50
	Printing (bills attached)	9 00
	Cash paid for telegram last year to Ohio State Medical Society	65
	Telegrams this year	50
	Expressage on Trans. received	1 25
	Paid Hibberd on Necrology	5 00
	Total amount due	$48 50

Last Year's Account.

Dues paid to Treasurer	$1,214 00
Money from exhibitors	25 00
Total	$1,239 00

E. S. ELDER, M. D.,
Secretary.

Dr. Hibberd—Mr. President, I move that the Secretary's report be accepted, and so much of it as relates to expenses be referred to the Committee on Finance.

The motion was carried.

The President—The next business is the report of the Treasurer, Dr. Kemper.

Dr. Kemper read his report as follows:

G. W. H. Kemper, M. D., in Account with the Indiana State Medical Society:

1885.	*Dr.*	
To balance	$6 95	
To amount from Secretary, dues	1,214 00	
To amount from Secretary, exhibitors	25 00	
		$1,245 95

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1885.	Cr.	
By balance Due Secretary (see Trans., p. 228)	$21 92	
By Secretary's bill (see Trans., p. 228)	78 55	
By Committee on Publication (see Trans., p. 231)	28 90	
By bill to W. B. Burford, (attached)	731 41	
By Wm. Garber, short-hand reporter	60 00	
By bill, Committee of Arrangements (p. 247)	121 00	
By allowance to Secretary (p. 246)	100 00	
By allowance Chairman Publication Committee (p. 246)	50 00	
By wrapping paper (p. 229)	3 00	
		$1,194 78
To balance		51 17
		$1,245 95

Respectfully submitted.

G. W. H. KEMPER, M. D.,
Treasurer Indiana State Medical Society.

Dr. Hibberd—Mr. President, I move that the Treasurer's report be received and referred to the Committee on Finance.

The motion was carried.

The President—The next business before the Society is the report of the Committee on Publication, Dr. Maxwell, Chairman.

Dr. Maxwell read the report as follows:

INDIANAPOLIS, March 31, 1885.

Indiana State Medical Society to Wm. B. Burford, Dr.:

1884.		
Feb. 6.	300 ¼-folio circulars	$3 00
June 9.	½ dozen bottles ink, 60c; 1 dozen penholders, 40c	1 00
June 9.	1 box bank pens	65
June 9.	2 quires Legal, 80c; 2 boxes seals, $1	1 80
June 9.	½ ream manilla wraps	3 00
Sept. 13.	100 ship. labels, $1; 75 postals printed, $1.50	2 50
Sept. 13.	38 lbs. wrap. paper, $2.66; 5 balls twine, $1	3 66
Sept. 13.	Directing and wrapping	4 50
Sept. 15.	1,400 copies Transactions	673 00
Sept. 15.	Add 12 pages brevier at $1.40	16 80
Sept. 15.	43 hours alterations	21 50
		$731 41

Received payment,

WM. B. BURFORD,
per Carleton.

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Mr. President and Gentlemen of the Indiana State Medical Society:

As chairman of the Committee on Publication I have the honor of submitting the following report:

There were fourteen hundred copies of the Transactions of the Society printed and bound in cloth at a cost of $711.90; about fifty cents per copy of 360 pages, the lowest price ever bid for the publication.

Owing to a mistake of the printer, a number of members who had neglected to pay their annual dues to the Society were recorded as having paid.

Thirty copies of the Transactions were sent to as many different medical journals in different parts of the country for review. Seventy-six copies were sent to public libraries, departments of government, and foreign and domestic societies in exchange for their publications.

A few papers which were taken home to be re-written were not returned and thus failed to appear in the Transactions.

Respectfully submitted,

ALLISON MAXWELL,
Chairman.

Dr. Hibberd—Mr. President, I move the report of the Committee on Publication be accepted, and that that portion referring to a little discrepancy between the Treasurer's report and the report of the committee shall be referred to the Committee on Finance.

The motion was carried.

The President—We are now through with the ordinary business of the Society. The first paper on the programme is from Dr. David C. Bryan, of Indianapolis. Subject: "The Human Pancreas."

Dr. Bryan read his paper, which was discussed, and, on motion, referred to the Committee on Publication. (See page 12.)

The President—Gentlemen, permit me to introduce to you, Dr. C. A. Ruggles, of Stockton, California.

Dr. Ruggles—Gentlemen, I am happy to meet you at this time, and I thank you for your courtesy.

On motion, Dr. Ruggles was invited to a seat on the platform as an invited guest of the Society.

The President—The next paper is by Dr. R. A. Woods, of Seymour. Subject: "Should Consultations be Encouraged or Discouraged?"

Dr. Woods read his paper, which was discussed, and, on motion, referred to the Committee on Publication. (See page 23.)

Dr. Wiest—Mr. Chairman, I wish to as a member of a com-

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mittee making an effort to secure the passage of a bill by the Legislature regulating the practice of medicine, that the bill was prepared and presented to the Legislature, and never heard of again.

Dr. Wilson Hobbs, of Knightstown—Mr. President, I wish to read the report of the committee instructed to secure the passage of a bill regulating the practice of medicine.

Dr. Hobbs read his report as follows:

REPORT OF COMMITTEE ON MEDICAL LEGISLATION.

To the Indiana State Medical Society:

MR. PRESIDENT AND GENTLEMEN—At your session last year, after hearing the report of the committee appointed the previous year to prepare a bill to regulate the practice of medicine and other papers on the subject, and a protracted discussion of the questions therein presented, the whole matter, with all the papers before the Society, was referred to the undersigned, with instructions to prepare a bill and endeavor to secure its passage into a law by the then coming Legislature.

In the acceptance of this commission, your committee were assured of the confidence of the State Society, and that they would have the assistance and support of its members in whatever they might determine as best to do.

Your committee met on call of the chairman at Indianapolis, in October, 1884, and after comparison of views, the chairman was directed to formulate a bill "To Regulate the Practice of Medicine" in compliance therewith. This he reported to another session of the committee, and after a thorough overhauling by the committee, and the intelligent criticism of a number of the best men in the State, a form of bill was agreed upon by us.

The distinguishing points of our bill were as follows:

1st. A board of medical examiners, consisting of seven men, to be appointed by the Governor from nominations made to him by the State Medical Societies of the several schools of medicine in the State, the representation of each of which should be in the ratio of the number of their adherents, but no school should be without representation.

2d. Physicians of five years' continuous practice in the State of Indiana, immediately preceding the taking effect of the act, shall be licensed to practice by the board of medical examiners, upon proof thereof, without other qualification.

3d. All others shall be disqualified for practice until they procure a certificate of examination and qualification by the board of examiners.

4th. No person shall be eligible to appear before the board for examination until he shall first have procured a diploma from a reputable medical college.

5th. No member of the board of examiners shall be a professor or lecturer in any medical college.

6th. Women assisting each other in labor were excepted from the penalties of the violations of the act.

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These are the chief points in the proposed act, the details being the necessary provisions to carry these into harmonious effect, and provide penalties.

We secured the agreement of Hon. Ferd. Winter, Senator from Marion county, to introduce the bill into the Senate, and urge its passage, it having his full assent in all its parts. Up to this point your committee were quite hopeful of success, having the profession of the State at our backs, and the promise of the concurrence and assistance of many intelligent men in the irregular schools.

On the first day of the session a bill, known as the Shively Medical Bill, was introduced into the Senate by a member of this Society, and of Grant County Medical Society, without our knowledge, and it was followed by others in both branches of the Legislature. Mr. Winter did not find opportunity to introduce his bill (ours) until after several days of the seesion had passed, but he finally got it in. In the meantime, some person with a bad motive, and with the intention to deceive, flooded the State with circulars, not marked as to the place of origin, and signed "by order of the committee," evidently meaning to be understood that it was issued by this committee, and urging the profession all over the State to write to their Representatives and Senators in the General Assembly to support the Shively or non-board of examiners' bill. The result was that both the Senate and House suffered an avalanche of appeals to go against the board of examiners' bill, and to support the Shively measure.

We were at once advised by Mr. Winter and the several members of the Senate Committee on Public Health, that there was no possible chance for the passage of a bill on our plan; that there were not half a dozen men in the Senate who would support it; that almost every member was committed against it, and was instructed by his medical friends at home against it.

At this point you will permit us to say that the chairman of the House Committee on Public Health stood squarely against any measure this Society might wish to forward, and far exceeded polite language in the expression of his purpose to oppose our desires. For this reason we had no access to that committee.

At this point your committee was fully satisfied that no such act as the interests of the people required could be passed at that session of the Legislature, and we were not disposed to lower our demands and assist in the passage of anything less, hence we advised Mr. Winter to offer our bill as a substitute for the Shively bill, which had been recommended by the Committee on Public Health, when it came to its third reading. This was done by him. It secured the honor of five or six votes, and we retired from the field.

Herewith please find the Shively bill as it finally passed and became a law.

Senator Shively is the author of the bill.

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AN ACT REGULATING THE PRACTICE OF MEDICINE, SURGERY AND OBSTETRICS, PROVIDING FOR THE ISSUING OF LICENSES TO PRACTICE, DEFINING CERTAIN MISDEMEANORS, AND PROVIDING PENALTIES.

SECTION 1. *Be it enacted by the General Assembly of the State of Indiana,* That it shall be unlawful for any person to practice medicine, surgery, or obstetrics in this State without first obtaining a license so to do, as hereinafter provided.

SEC. 2. Any person desiring to practice medicine, surgery, or obstetrics, in this State, shall procure from the Clerk of the Circuit Court of the county wherein he or she desires to practice, a license so to do, which license shall be issued to such person only when he or she shall have complied with the following conditions, to wit: When such applicant shall file with such Clerk his or her affidavit, stating that such applicant has regularly graduated in some reputable medical college, and shall exhibit to such Clerk the diploma held by such applicant; or when such applicant shall file with such Clerk his or her affidavit, together with a certificate signed by two reputable house or freeholders, stating that he or she has resided and practiced medicine, surgery and obstetrics in this State, continuously, for ten years immediately preceding the date of the taking effect of this act; or when such applicant shall file with such Clerk his or her affidavit, stating that he or she has resided and practiced medicine, surgery and obetetrics in this State, continuously, for three years immediately preceding the date of the taking effect of this act, and had, prior to said date, attended one full course of lectures in some reputable medical college. Such applicant shall pay to such Clerk, for such license, the sum of one dollar and fifty cents, and such Clerk shall record such license, together with the name of the college in which such applicant graduated, and the date of his or her diploma, in a book to be kept for such purpose, and which shall be a public record.

SEC. 3. Any Clerk who shall issue a license to practice medicine, surgery or obstetrics, to any person who has not complied with the requirements of section 2 of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than twenty-five dollars nor more than one hundred dollars, and such license, or one procured by any false affidavit, shall be deemed and held to be void.

SEC. 4. Any person who shall practice medicine, surgery or obstetrics in this State, without having first procured from the Clerk of the Circuit Court of the county wherein he or she shall so practice, a license as provided in this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than ten dollars nor more than two hundred dollars: *Provided,* That this act shall not be deemed to prohibit women from practicing obstetrics, and such midwives are hereby expressly exempted from its provisions.

SEC. 5. No cause of action shall lie in favor of any person for services as physician, surgeon or obstetrician, who had not, prior to the rendition of such services, procured a license to practice, as herein provided for; and any person who shall pay any sum of money or deliver any property, for any such services, to any person who is not so licensed, may recover the same or the value thereof in any Court of competent jurisdiction in this State.

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SEC. 6. The following shall be the form of license under this act: The Clerks of the Circuit Courts shall appropriately fill up the blanks and issue the same under the seal of their respective Courts, to wit:

The State of Indiana, ——— *County, ss:*

I, ———, Clerk of the Circuit Court of ——— County, in said State, do hereby certify that ——— has complied with the laws of the State of Indiana relating to the practice of medicine, surgery and obstetrics, and is hereby authorized to practice medicine, surgery and obstetrics in said county.

Witness my hand and the seal of said Court, this ——— day of ——— 18—.

[L. S.] ———————, Clerk.

Your committee have only to say, in conclusion, that while this act is not what they desired to see enacted, and what we think all intelligent laymen, as well as physicians, believe the people need, we hope it may prove a stage of progress yet to be improved upon, and that this Society may take steps, should it be thought any are needed, to see that the law is fully complied with.

All of which is respectfully submitted.

WILSON HOBBS,
JAMES H. WOODBURN,
Committee.

Whereupon the Society adjourned until 2 o'clock P. M.

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2 O'CLOCK P. M.

The Society was called to order by the President.

The President—We will now hear the report of the Committee on Necrology, by Dr. J. F. Hibberd.

Dr. Hibberd read the report of the Committee on Necrology, which was, by consent, referred to the Committee on Publication.

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REPORT OF COMMITTEE ON NECROLOGY.

Mr. President:

In reply to my postal circular, mailed on the 13th of April ult., to the seventy secretaries of county medical societies, as reported in our last volume of transactions, asking information touching the mortality of members in their respective societies, I received answers from thirty-eight counties, and from thirty-two counties no response of any kind came.

Grant, Hancock, Henry, Marion, Posey, White, Whitley and Vanderburgh counties each reported one death, making a total of eight, and obituary notices of the deceased are herewith submitted. Knox county advised me of the death of Dr. E. Reel last summer, but has given me no other information concerning him. I understood the note from Allen county to intimate that death had been among their members and that further reply would be made, but as nothing further has been received the note was probably wrongly interpreted.

Your committee can not but regret that all those to whom these inquiries are addressed do not feel sufficient interest in the completeness and accuracy of these reports to comply with the simple but urgent request for a postal card acknowledgment of its receipt.

Some of the notices herewith presented will be found very meagre, but in such cases all the facts received have been incorporated and it is the best the committee could do.

Respectfully submitted,

JAS. F. HIBBERD,

May 12, 1885. *Committee.*

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JAMES OLIVER ESPY, M. D.,

BORN FEBRUARY 23, 1845,

IN RURAL VALLEY, PENNSYLVANIA.

DIED DECEMBER 18, 1881,

AT NEW PALESTINE, INDIANA.

His education was limited to the opportunities afforded by the common schools of Pennsylvania, but his energy supplied much that these meagre means did not afford. For some years he taught school, then studied medicine in Pennsylvania, and attended lectures in Jefferson Medical College, Philadelphia, in 1868–69, then came West and graduated in the Medical College of Indiana, in 1880. He practiced for several years in Fountaintown, Shelby county, but for the last eighteen months of his life in Palestine, Hancock county. His death was caused by pneumonia.

Dr. Espy was President of the Hancock County Medical Society in 1880, was always an active member, and contributed some valuable papers to its transactions. A diligent student, of active intellect and quick perception, he was an honor to his profession and popular among all classes of citizens.

[Prepared by S. M. Martin, M. D., Greenfield, Ind.]

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CONSTANTINE LOMAX, M. D.,

BORN DECEMBER 31, 1814,

IN GUILFORD COUNTY, NORTH CAROLINA.

DIED MARCH 6, 1884,

AT MARION, INDIANA.

When two years old he emigrated with his parents to Wayne county, Indiana, and again in 1837, to Laporte county, Indiana. In 1845 he began the study of medicine with Dr. Daniel Meeker, and graduated in the Indiana Medical College in 1848, and took the *ad eundem* degree in the Medical College of Ohio in 1851. He began practice in 1848 with his brother William in Marion, and continued in that place until his death. Was one of the founders of the Grant County Medical Society, filled all the offices within its gift, and was a working member as long as he lived. Was a member of the District Medical Society, and at one time of the American Medical Association. In 1863 he was Surgeon of the Board of Enrollment, and at the time of his death President of the Board of Examining Surgeons for pension applicants.

Dr. Lomax was a member of M. E. Church, and was a gentleman of a cheerful, urbane disposition, with great kindness of heart, and had a scrupulous regard for the feelings of others. These accomplishments, with eminent professional attainments and a constant regard for the honor and dignity of the profession, made him altogether worthy of the high esteem in which he was held by all classes of citizens.

[Prepared by Wm. Lomax, M. D., Marion, Ind.]

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HIRAM G. JONES, M. D.,

BORN JULY 15, 1824,

IN STAUNTON, VIRGINIA.

DIED APRIL 30, 1884,

AT EVANSVILLE, INDIANA.

He completed his general education in the Western Reserve College, Cleveland, and graduated in medicine in the Starling Medical College, Columbus, Ohio. He began practice in Portsmouth, Ohio, but in 1858 removed to Evansville, Ind. For several years he was Professor of Materia Medica and Therapeutics in the Evansville Medical College, then of Principles and Practice of Medicine, and was Dean at the time of his death. For ten years he was health officer of the city, and always took a deep interest in sanitary affairs.

Dr. Jones was a high minded, conscientious practitioner of Medicine, refusing no one that needed his services. He was an active member of the Presbyterian Church, and a consistent Christian gentleman, and an earnest member of the Red Ribbon Club.

His second wife was Miss Annie Fahnestock, of New Jersey, who, with five children, survive him.

[Sent to the Committee anonymously.]

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STEPHEN S. AUSTIN, M. D.,

BORN SEPTEMBER 12, 1821,

IN ONONDAGA COUNTY, NEW YORK.

DIED AUGUST 12, 1884,

AT ETNA, INDIANA.

Dr. Austin left New York when twenty-two years old, and came to Laporte, Indiana. Here he shortly afterwards began the study of medicine. He graduated at the Indiana Medical College, in February, 1849. The same year he entered into a partnership in the practice of medicine with Dr. Silas Jones, at Wolf Lake, Noble county, Indiana. He soon afterward removed to the vilage of Etna, Noble county, (now Whitley county), where he resided and practiced his profession until his death.

He was an energetic member of the Whitley County Medical Society, being its President at the time of his death.

He was twice married. His first wife was a teacher of languages in the Laporte schools. He married his second wife in August, 1852. She survives him.

Dr. Austin was a man of great force of character, and of superior attainments. During a long and successful practice his conduct was always that of a dignified gentleman, and an exemplary man.

[Prepared by N. I. Kithcart, M. D.]

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FRANK JACKMAN, M. D.,

BORN JUNE 26, 1855,

IN MILROY, INDIANA.

DIED NOVEMBER 15, 1884,

AT ORLANDO, FLORIDA.

The natural bent of his mind was toward the sciences, and while yet a boy he was learned in geology, and had collected a cabinet. Archeology was a favorite study, and he wrote an essay on the Mounds and Earthworks of Rush County, Indiana, which was published in the Smithsonian Report of 1879. He was accomplished in the Greek, Latin and German languages, was an agreeable writer, and for a time correspondent of the Philadelphia Medical News. Was an amateur architect, and a gentleman of general culture.

Dr. Jackman studied medicine with Dr. L. C. Thomas, of Milroy, and graduated in Bellevue Medical College New York in 1880, and soon after opened an office in Indianapolis where he remained until August, 1884, when he went to Florida on account of his wife's health, was seized with an endemic fever followed by rheumatism of which he died suddenly, unexpectedly and without pain. His remains were interred at Milroy. He was a member of the Marion County Medical Society at the time of his death.

Dr. Jackman had no children and his widow survives.

In early life he joined the Christian Church and was guided by a firm religious faith until the end.

[Prepared by F. M. Ferree, M. D., Indianapolis, Ind.]

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S. H. BALLARD, M. D.,

BORN MARCH 26, 1856,

IN HAUBSTADT, INDIANA.

DIED FEBRUARY 8, 1885,

AT HAUBSTADT, INDIANA.

Dr. Ballard graduated in Jefferson Medical College, Philadelphia, in 1877.

He became a member of the Posey County Medical Society in 1883.

He was sick fourteen months with chronic bronchitis.

[Prepared by S. H. Pearse, M. D., Mt. Vernon, Indiana.]

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GEORGE NATHANIEL REA, M. D.,

BORN JULY 28, 1852,
IN LEWISVILLE, INDIANA.

DIED FEBRUARY 19, 1885,
AT NEW CASTLE, INDIANA.

He obtained his literary education in the private and public schools of New Castle, but an accident to his eye caused him to suspend his studies and he entered as a dry goods clerk for several years. In 1875, he began the study of medicine with his father, John Rea, M. D., in New Castle, and graduated in the Medical College, of Ohio, in 1878, and immediately began practice with his father, but went to Ft. Wayne, in 1881. In 1883, returned to New Castle and there remained until death.

Dr. Rea was married to Miss Ida R. Galligher, of Muncie, in 1878, by whom he had two sons and a daughter. One son and the daughter with the widow survive.

He was a member of the Henry County Medical Society, and the State Medical Society. He was a Knight Templar.

[Prepared by Samuel Ferris, M. D., New Castle, Indiana.]

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W. R. ADYLOTTE, M. D.,

BORN ———, ———.

IN ———, ———.

DIED APRIL 1, 1885,

AT BADGER, INDIANA.

Dr. Adylotte was a graduate of Rush Medical College, Chicago, Illinois, and came to White county about six years ago, and has since that time been in successful practice at Badger.

Among his professional confreres he commanded the highest regard, and among the people he was held in deserved esteem.

He was a member in good standing of the White County Medical Society and the State Medical Society of Indiana.

R. M. DALZELL,
A. B. JONES,
J. W. MCALLISTER.

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THEODORE DAVENPORT, M. D.,

BORN OCTOBER 4, 1828,

IN SULLIVAN COUNTY, N. Y.

DIED JULY 4, 1884,

AT WARSAW, INDIANA.

He attended his first course of lectures at the University of New York and subsequently graduated at Albany Medical College, Albany, N. Y., January 21, 1851.

In May of the same year he located at Oswego, Kosciusko county, Indiana, and in the year 1857 he moved to Warsaw, Indiana, where he remained in practice until the year 1883, when he was appointed Assistant Superintendent of the Insane Hospital of Indiana.

[Reported by C. W. Burket, M. D., Warsaw, Ind.]

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JOHN C. WATERS, M. D.,

BORN 1830,

IN DUBLIN, IRELAND,

DIED AUGUST 23, 1884,

AT INDIANAPOLIS, INDIANA.

"——These external manners of laments
Are merely shadows to the unseen grief."

Dr. John C. Waters acquired his scholastic education at Trinity College; he was graduated with honor at the age of nineteen; he fitted himself for the law, his voice failed, he sought relief in Italy, and returned to commence the study of the Healing Art, took his degree and entered the English army as assistant surgeon; served in the Crimean War, received honorable mention and promotion, and by a brave act at the battle of Balaklava saved the life of the Duke of Cambridge.

On his return to civil life he acquired a lucrative practice, a handsome home at Leipsic and became surgeon-in-chief of the Miseracordia Hospital.

In 1867, as assistant editor of the Dublin Freeman's Journal, he incurred the displeasure of the English government and was imprisoned, his property was confiscated, and his wife died. In 1872 he came to New York, engaged in the practice of medicine, married Miss Margaret J. Shaughnessey, who, with three sons by his first wife, survive him. In 1873 he went to Baltimore to edit the Baltimore Mirror; in 1875 he was invited to Indianapolis to edit the Central Catholic. In addition to his literary work he engaged in the active practice of medicine and made many public addresses, chiefly to Irish and Catholic audiences; he was editorial contributor to the Central Catholic-Advocate, of Louisville, and his essay was awarded the Christmas prize, 1882, by the Dublin Freeman's Journal. He received two gold medals while in the English army, and the honorary degree Doctor of Medicine from an American college. He encouraged the study of medicine by offering annually a gold medal —the Water's prize—in the Central College of Physicians and Surgeons. He was a member of Marion County Medical Society, medical examiner for the Catholic Knights of America, consulting physician to St. Vincent's Infirmary, an institution he labored diligently to found and in which he died in the fifty-fourth year of his life.

[Prepared by P. J. Watters, M. D., Indianapolis, Ind.]

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The President—The next business before the Society is a paper by Dr. Wm. Lomax, of Marion. Subject: "Alcoholic Inebriety."

Dr. Lomax read his paper, which was referred, by motion, to the Committee on Publication. (See page 27.)

The President—The Committee on Medical Ethics will now make its report, Dr. S. H. Charlton, chairman.

Dr. Charlton read the report as follows:

Mr. President and Gentlemen of the Indiana State Medical Society:

Your Committee on Medical Ethics, to whom was referred the case of Lomax *vs.* Hess, from the Grant County Medical Society, beg leave to make the following report:

That we find a great deal of bitter feeling engendered on both sides; that many things have been said that ought not to have been said; that the proceedings of the Grant County Medical Society in this case have been widely circulated throughout the State, to the discredit of the profession; that Dr. Lomax reported the case of Mrs. Miles to the Grant County Medical Society, and she was regarded as his patient; that afterwards Dr. Hess operated on the case without proper investigation as to whose patient she was, and in this respect acted discourteously toward Dr. Lomax, although there was some evidence to show that Dr. Lomax had apparently discontinued his attention to the case, owing to sickness and death of his brother, and his own feeble health. But in the proceedings of the Grant County Medical Society, when the charges were before said society, Dr. Lomax was permitted to vote on said charges when such vote was the casting vote, which, in the opinion of your committee, was not proper or just. Therefore, your committee would recommend that the case be referred back to the Grant County Medical Society, with instructions to admonish both gentlemen to act, in the future, more in accordance with good professional fellowship, as we consider that both have acted indiscreetly.

S. H. CHARLTON, *Chairman*,
MOSES BAKER,
N. P. HOWARD,
J. Z. POWELL,
S. W. EDWINS.

Dr. Hibberd, of Richmond—Mr. President, I move that the report of the Committee on Ethics be accepted and approved.

Dr. Stillson—I second the motion.

The motion was carried.

The President—The next business before the Society is the paper of Dr. J. O. Stillson, of Indianapolis. Subject: "Cancer of the Eye."

Dr. Stillson read his paper, which was, on motion, referred to the Committee on Publication. (See page 36.)

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The President—The next paper will be read by Dr. Wilson Hobbs, of Knightstown. Subject: "Strangulated Hernia—Two Cases."

Dr. Hobbs read his paper, which was discussed, and, on motion, referred to the Committee on Publication. (See page 46.)

The President—The next will be a paper by Dr. E. Hadley, of Indianapolis. Subject: "Report of a Case of Addison's Disease."

Dr. Hadley read his paper, which was discussed, and, on motion, referred to the Committee on Publication. (See page 55.)

The President—The next business before the Society is the reading of a paper by Dr. W. B. Ryan, of Willow Branch. Subject: "Treatment of Cholera Infantum."

Dr. Ryan read his paper, which was discussed, and, on motion, referred to the Committee on Publication. (See page 63.)

Whereupon the Society adjourned until 7 o'clock P. M.

EVENING SESSION.

7 O'CLOCK P. M.

Vice President Gregg—Gentlemen, you will please come to order. Ex-Presidents of the Society who are present will please take seats upon the stage. We will now listen to the annual address of the President of the Society, Dr. Woodburn.

Dr. Woodburn read his paper.

The Vice President—Gentlemen, you have heard the address of the President. What is your pleasure in regard to it?

Dr. Lomax—I would move that the thanks of the Society be tendered to our worthy President for his able address, and that he be requested to furnish the manuscript for publication, and that it be referred to the Committee on Publication.

After discussion of the paper, the motion was agreed to.

Whereupon the Society adjourned until to-morrow (May 13, 1885,) at 9 o'clock A. M.

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SECOND DAY.

MORNING SESSION.

MAY 13, 1885, 9 O'CLOCK A. M.

The Society was called to order by the President.

The President—The first business before the Society is the announcement of the Committee on Nominations by the Secretary.

The Secretary made the announcement of the Committee on Nominations, as follows:

ALLEN—J. S. Gregg.
BARTHOLOMEW—W. H. Lopp.
BENTON—J. S. Mavity.
BLACKFORD—
BOONE—M. H. Rose.
BROWN—
CARROLL—
CASS—J. Z. Powell.
CLARK—
CLINTON—Chas. Chittuck.
DAVIESS—
DEARBORN—T. E. Craig.
DECATUR—W. H. Wooden.
DEKALB—F. W. Fanning.
DELAWARE—A. H. Good.
DUBOIS—A. E. Glezen.
ELKHART—
FAYETTE—S. N. Hamilton.
FLOYD—E. P. Easley.
FOUNTAIN—G. S. Jones.
FRANKLIN—
GIBSON—W. W. Blair.
GRANT—Wm. Flynn.
HAMILTON—A. D. Booth.
HANCOCK—N. P. Howard, Jr.
HENDRICKS—G. H. F. House.
HENRY—W. Hobbs.
HOWARD—L. Kern.
HUNTINGTON—I. E. Lyons.
JACKSON—R. A. Woods.
JAY—C. S. Arthur.
JEFFERSON—C. H. Wright.
JENNINGS—N. D. Gaddy.
JOHNSON—
KNOX—F. W. Beard.
KOSCIUSKO—J. H. Davisson.
LAGRANGE—S. A. Work.
LAWRENCE—Ben. Newland.
MADISON—Geo. F. Chittenden.
MARION—D. C. Bryan.
MARSHALL—J. H. Wilson.
MARTIN—
MIAMI—W. H. Brenton.
MONROE—Jas. D. Maxwell.
MONTGOMERY—A. P. Fitch.
MORGAN—
NOBLE—
OWEN—Walter Schell.
PARKE—J. W. Harvey.
PIKE—
PORTER—D. J. Loring.
POSEY—S. H. Pearse.
PULASKI—G. W. Thompson.
PUTNAM—E. B. Evans.
RANDOLPH—J. E. Markle.
RUSH—J. A. Axline.
STEUBEN—H. D. Wood.
ST. JOSEPH—L. H. Dunning.
SWITZERLAND—Wm. Freeman.
TIPPECANOE—G. F. Beasley.
TIPTON—A. M. Vickery.

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The President—The Secretary will now proceed to call the roll of delegates which was on yesterday, deferred until this time.

After the calling of the roll the Secretary said:

Mr. President, the following is the list of delegates to this Society from the County Societies to this Society, and to the American Medical Association:

LIST OF DELEGATES TO AMERICAN MEDICAL SOCIETY.

ADAMS—

ALLEN—J. S. Gregg, B. S. Woodworth, Miles F. Porter, Fort Wayne.

BARTHOLOMEW—

BENTON—

BLACKFORD—Peter Dryer, Hartford City; C. Q. Shull, Montpelier.

BOONE—A. G. Porter, R. E. Jones, M. H. Bonnel, Lebanon.

BROWN—

CARROLL—

CASS—John Herman, W. H. Bell, Logansport.

CLARK—T. B. Graham, Jeffersonville.

CLINTON—

DAVIESS—

DEARBORN—Geo. Sutton, Aurora, and M. H. Harding, Lawrenceburg, from State Society; T. M. Kyle, Manchester.

DECATUR—Jas. Lamb, W. C. Henry, Aurora; H. C. Vincent, Guilford.

DEKALB—F. W. Fanning, Butler.

DELAWARE—Jont. Ross, Blountsville; Samuel V. Jump, New Burlington.

DUBOIS—G. P. Williams, Huntingburg; T. Wertz, Jasper.

ELKHART—J. A. Work, Elkhart; C. C. Bowers, Bristol.

FAYETTE—L. D. Dillman, J. S. Chitwood, V. H. Gregg, Connersville.

FLOYD—John Sloan, Chas. Bowman, New Albany.

FOUNTAIN—W. C. Cole, Attica; George C. Hays, Hillsboro.

FRANKLIN—J. T. McCarty, Brookville; D. S. Maddox, Fairfield.

GIBSON—

GRANT—Wm. Lomax, Lewis Williams, H. D. Reasoner, Marion; L. A. Meek, Jonesboro.

HAMILTON—A. R. Tucker, Cicero; W. B. Graham, Noblesville.

HANCOCK—

HENDRICKS—J. S. Ragan, Avon.

HENRY—T. W. Gronendyke, G. W. Burke, New Castle.

HOWARD—William Scott, R. B. Wilson, E. A. Armstrong, Kokomo.

HUNTINGTON—W. C. Chaffee, F. S. C. Grayston, Huntington.

JACKSON—S. H. Charlton (State), N. N. Shipman, R. Woods, Seymour.

JAY—C. S. Arthur, Portland.

JEFFERSON—

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JENNINGS—J. Frank Mitchell, Vernon.
JOHNSON—
KNOX—F. W. Beard, Vincennes.
KOSCIUSKO—
LAGRANGE—John Dancer, South Milford; Wm. Spaulding, alternate, Lagrange; Wm. Hughes, alternate, Lima.
LAWRENCE—
MADISON—W. P. Harter, Anderson.
MARION—J. I. Rooker (State), Castleton; L. L. Todd, J. W. Hervey, T. N. Bryan, E. S. Elder (State), T. B. Harvey, L. D. Waterman, Indianapolis.
MARSHALL—T. T. Linn, Bourborn; J. A. Sutton, Argos.
MARTIN—G. W. Walls, Shoals.
MIAMI—Carter B. Higgins, John H. Helm, Peru.
MONROE—
MONTGOMERY—J. W. Straughn, Parkersburg; A. P. Fitch, Waynetown.
MORGAN—
NOBLE—
OWEN—Wm. V. Wiles, Allen Pierson, Spencer.
PARKE—John A. Goldsberry, Annapolis; B. F. Hudson, Montezuma.
PIKE—J. R. Adams, A. R. Byers, Petersburg.
PORTER—
POSEY—O. T. Schultz, Mt. Vernon; G. W. Welborn, Stewartsville.
PULASKI—
PUTNAM—L. M. Hanna, Greencastle.
RANDOLPH—I. N. Trent, Losantville; N. T. Chenoweth, Windsor.
RUSH—W. H. Smith, S. W. McMahan, Rushville; W. S. Hargrove, New Salem.
STEUBEN—T. F. Wood, Metz; H. D. Wood, Angola.
ST. JOSEPH—
SWITZERLAND—
TIPPECANOE—S. T. Yount, Lafayette.
TIPTON—O. G. Forrer, A. B. Pitzer, N. W. Holly, Tipton.
VANDERBURGH—C. P. Bacon, A. M. Owen, Evansville.
VIGO—L. P. Willien, W. P. Armstrong, Terre Haute.
WARREN—Orin Aborn, Williamsport.
WABASH—
WASHINGTON—
WAYNE—Samuel S. Boyd, Dublin; Cyrus N. Blount, Hagerstown; J. R. Wiest (State), James F. Hibberd, Richmond.
WELLS—
WHITE—Wm. Spencer, Monticello; John Medaris, Brookston.
WHITLEY—Martin Ireland, D. M. Marshall, Columbia City.

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DELEGATES TO STATE MEDICAL SOCIETY.

ADAMS—
ALLEN—J. S Gregg, C. B. Stemen, G. W. McCaskey.
BARTHOLOMEW—F. Falk, J. S. Arwine. A. J. Banker, R. N. Pfeifer.
BENTON—J. A. Gray, J. W. Green
BLACKFORD—J. R Harrold, N. D. Clowser.
BOONE—Thos. A. Bonnel, Jno. M. Kane, A. J. Clark, M. H. Rose, Thos. H. Lane.
BROWN—
CARROLL—
CASS—J. Z. Powell, W. H. Bell. Alternates, J. E. Sterrett, F. A. Busjahn.
CLARK—N. Field, G. W. Haymaker.
CLINTON—Charles Chittick, J. S. McMurray, S. O. Knapp, Oliver Gard.
DAVIESS—
DEARBORN—R. C. Bond, T. E. Craig, H H. Sutton, Fred Treon, J. I. Gatch, A. J. Bowers.
DECATUR—J. V. Schofield, Jno. H. Alexander, W. H. Wooden.
DEKALB—F. W. Fanning.
DELAWARE—A. H. Good, Geo. R. Green, Jont. Ross, A. B. Bradbury.
DUBOIS—A. E. Glezen, E. J. Kempf, W. H. Demott.
ELKHART—L. H. Dunning, W. A. Neal.
FAYETTE—S. N. Hamilton, L. D. Dillman.
FLOYD—E. P. Easley, C. P. Cook, J. L. Stewart.
FOUNTAIN—J. N. Spinning, J. W. Mock, Spronson Jones.
FRANKLIN—H. G. Averdick, T. H. Conner, E. B. Mann.
GIBSON—P. Ottmann, S. E. Munford, W. G. Kidd, W. W. Blair.
GRANT—Frank Lennox, Wm. Lomax, S. C. Weddington, J. S Shively, J. L. Lord, W. H. Hubbard, Wm. Flynn.
HAMILTON—A. D. Booth, F. M. Worford, H. N. Herr.
HANCOCK—W. B. Ryan, N. P. Howard, Wm. Pearson.
HENDRICKS—C. E. Farabee, G. H. F. House.
HENRY—John Rea, W. Hobbs, O. E. Holloway, Samuel Ferris.
HOWARD—L. Kern, W. H. Hull, W. B. Payton, O. C. Johnson, R. H. Smith.
HUNTINGTON—A. J. Boswell, Ervin Wright, H. Shafer, W. B. Lyons.
JACKSON—J. R. Anthony, F. S. Galbraith, J. A. Stillwell, R. Woods.
JAY—T. S. Shepherd, Philip Dickes, I. G. Sims.
JEFFERSON—J. H. Mathews, C. H. Wright.
JENNINGS—Jas. P. Cope, Nelson D. Gaddy.
JOHNSON—
KNOX—F. W. Beard, J. C. Beven, J. H. Hensley, D. Staley.
KOSCIUSKO—J. H. Davison, C. W. Burket, F. M. Pearman.
LAGRANGE—C. H. Niman, S. A. Work, C. D. Goodrich.
LAWRENCE—Ben Newland.
MADISON—L. E. Alexander, Oliver Broadbent, Geo. F. Chittenden, Ward Cook, John W. Cook.

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MARION—D. C. Bryan, A. W. Brayton, Geo. J. Cook, Geo. Combs, Jos. Eastman, S. E. Earp, F. M. Ferree, J. J. Garver, E. F. Hodges, A. Maxwell, O. B. Pettijohn. J. A. Sutcliffe, J. O. Stillson, L. L. Todd. T. A. Wagner.

MARSHALL—J. H. Wilson, A. B. Younkman, T. T. Linn, A. C. Holtzendorff.

MARTIN—H. M. Shirley, S. H. Brittain.

MIAMI—W. H. Brenton, W. K. Armstrong, B. R Graham, W. A. Ager.

MONROE—Jas. D. Maxwell.

MONTGOMERY—J. E. Dunlavy, J. A. Ensminger, T. E. Griffith, A. P. Fitch.

MORGAN—

NOBLE—

OWEN—Walker Schell, S. E. Smith, W. V. Wiles, J. M. Goss.

PARKE—A. D. Tomlinson, B. F. Hudson, J. W. Harvey, W. H. Gillum.

PIKE—R. W. Harris, J. T. Smith, T. W. Bassinger, C. J. Agee.

PORTER—D. J. Loring, J. C. Carson, H. F. C. Miller.

POSEY—D. Krawsgrill, S. H. Dean, D. C. Ramsey, G. R. Pickenpaugh.

PULASKI—G. W. Thompson.

PUTNAM—W. L. McCarty, Abe Preston, E. B. Evans, G. W. Smythe, T. M. Zane.

RANDOLPH—John T. Chenoweth, J. E. Markle, J. L. Contie, H. P. Franks.

RUSH—J. A. Axline, W. S. Hargrove, F. G. Hackleman, F. B. King.

STEUBEN—H. D. Wood, W. V. Rousberg, F. F. Wood.

ST. JOSEPH—L. H. Dunning.

SWITZERLAND—Wm. Freeman.

TIPPECANOE—Moses Baker, Geo. F. Beasley, J. F. Simison.

TIPTON—M. V. B. Vickery, D. N. Rubush, J. M. Grove. Alternates, N. W. Doan, M. V. B. Vickery, T. O. Armfield.

VANDERBURGH—J. W. Compton, Chas. Knapp, W. B. Rose.

VIGO—J. P. Worrell, E. E. Sloan, E. F. Stetson, G. W. Crapo, P. C. Hood.

WABASH—S. G. Thompson, R. F. Blount, M. E. Renner, M M. Hale, J. H. Ford, A. McD. Thomas.

WARREN—Orin Aborn.

WARRICK—T. J. Hargan, D. A. Deforest.

WASHINGTON—S. W. Duff.

WAYNE—Chas. S. Bond, Nathan H. Ballard, Levi C. Johnson, Leverett S. Kelsey.

WELLS—J. W. Orum, J. S. Metts, C. T. Melsheiner.

WHITE—Wm. Spencer, J. W. McAllister.

WHITLEY—N. I. Kithcart, N. R. Wenger.

VANDERBURGH—

VIGO—J. P. Worrell.

WABASH—S. G. Thompson.

WARREN—

WARRICK—

WASHINGTON—S. W. Duff.

WAYNE—Levi C. Johnson.

WELLS—J. D. Metts.

WHITE—

WHITLEY—N. I. Kithcart.

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The President—The next will be the reading of a paper by Dr. G. W. McCaskey, of Ft. Wayne, subject, "Geographical Pathology of Consumption."

Dr. McCaskey read his paper, which was, on motion, referred to the Committee on Publication.

The President — Gentlemen, we have three other papers, mainly on the same subject, and we had better have them all read and discuss them at once. The next will be a paper by Dr. J. L. Contie, of Deerfield, subject, "Hereditary Phthisis Pulmonalis."

Dr. Contie read his paper, which was, on motion, referred to the Committee on Publication.

The President—The next paper for consideration is by Dr. C. S. Bond, of Richmond, subject, "Consumption in Indiana."

Mr. Bond read his paper, which was, on motion, referred to the Committee on Publication."

Dr. David C. Bryan, of Indianapolis—Mr. President, if the Society will hear me, I will read the report of the Committee on Finance.

Dr. Bryan read the report, as follows:

The Committee on Finance to whom was referred the reports of Dr. E. S. Elder, Secretary, Dr. G. W. H. Kemper, Treasurer, and Dr. A. Maxwell, chairman of Publishing Committee, respectfully report:

Committee organized by electing Dr. D. C. Bryan, Secretary. Dr. E. S. Elder's account audited, and a mistake of $10.00 in Society's favor; the mistake occured in addition. Also omission of $5.00 paid by Dr. Elder to Dr. Hibberd as chairman of Committee on Necrology, a receipt for which is herewith filed as a voucher. Dr. Kemper's report audited and found correct and approved.

Dr. Maxwell chairman of Publishing Committee, reports:

"That owing to a mistake of the printer a number of members who had neglected to pay their annual dues to the Society, were recorded as having paid," as follows, 14 counties to wit:

Bartholomew	6 members.	Hamilton	10 members.
Dearborn	1 member.	Huntington	3 members.
Dekalb	2 members.	Jackson	7 members.

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Delaware	3 members.	Lawrence	1 member.
Elkhart	1 member.	Tipton	3 members.
Franklin	3 members.	Wabash	3 members.
Gibson	1 member.		

Three counties, Warren, Tippecanoe and Steuben, each paid for one more than enumerated in the transactions, leaving forty-one who are recorded as having paid who failed to pay. This accounts for the discrepancy between the accounts of the Secretary and Treasurer reported yesterday.

The committee recommend that the usual fee of $100.00 be allowed Dr. Elder; also recommend that Dr. Maxwell, be allowed $50.00 for services as chairman of Publication Committee.

All of which is respectfully submitted,

BEN. NEWLAND, Chairman.
W. W. BLAIR,
JOHN REA,
C. W. BURKET,
DAVID C. BRYAN.

On motion the report of the Committee on Finance was accepted and approved.

The Committee on Finance, by its chairman, Dr. Newland, made a verbal report that the assessment for the coming year shall be $1.00. Which report was accepted and approved by the Society.

Dr. Blount—I move that those persons who have received an extra number of books, and who are delinquent and have not paid, shall be required to return the books or make them good to the Society.

The motion was carried.

The President—The next business before the Society will be a paper by Dr. Walter Schell, of Spencer, subject, "The Infectious Nature of Tuberculosis." Dr. Schell read his paper, which was, on motion, referred to the Committee on Publication.

The President—Discussion of the last four papers is now in order.

The Secretary—I have a letter from the Institution for the Blind inviting the State Medical Association to visit that Institution.

On motion the Society accepted the invitation with thanks.

The Secretary—I have a communication from Dr. Wishard inviting the Society to visit the Indianapolis City Hospital.

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On motion the Society accepted the invitation with thanks.

The President—The next is a paper by Dr. C. B. Stemen, of Ft. Wayne, subject, "Trephining and Resection of the Spine, with report of three cases." Dr. Stemen read his paper, which was discussed, and, on motion, referred to the Committee on Publication.

Whereupon the Society adjourned until 2 o'clock P. M.

AFTERNOON SESSION.

2 O'CLOCK P. M.

The Society was called to order by the President.

The President—The first business will be the report of the Committee on Nominations, Dr. Wilson Hobbs, chairman.

Dr. Hobbs—I have the honor of presenting the report of this committee, as follows:

President, Dr. J. S. Gregg, Ft. Wayne.
Vice-President, Dr. W. H. Hurt, Montgomery County.
Secretary, Dr. E. S. Elder, Indianapolis.
Assistant Secretary, Dr. W. H. Locke, Bartholomew County.
Treasurer, Dr. G. W. H. Kemper, Delaware County.

Dr. Newland—Mr. President, I move that the report of the Committee on Nominations be concurred in.

The motion was carried.

The Secretary—Mr. President, I have a communication from the Indiana State Pharmaceutical Society inviting us to attend their session.

Dr. Newland—Mr. President, I move that we thank the Indiana Pharmaceutical Convention and accept the invitation.

The motion was carried.

The President—When we adjourned before noon, the question of discussing Dr. Stemen's paper was before the Society, and that will be the first business now.

Dr. Stemen's paper was discussed.

The President—The next paper is one by Dr. L. H. Dunning, of South Bend, subject, "Emmett's Operation for Laceration

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of the Cervix Uteri." Dr. Dunning read his paper, which was discussed, and on motion referred to the Committee on Publication.

Dr. David C. Bryan—Mr. President, the Committee on Finance respectfully submit the following report:

The Committee on Finance respectfully recommend the allowance of $132.80, the amount expended by the chairman of the Committee on Arrangements, as per report of bill of items.

BEN. NEWLAND, Chairman,
JOHN REA,
C. W. BURKET,
DAVID C. BRYAN, Secretary.

On motion, the report of the Committee on Finance was approved and accepted.

Dr. S. H. Pearse—Mr. President, the Committee on Credentials submit the following report:

The Committee on Credentials, having had the subject of the reorganization of the Warrick County Medical Society before them, find report correct and recommend that the report be accepted and they be received as auxiliary to this Society.

S. H. PEARSE,
C. B. STEMEN,
N. I. KITHCART.

On motion the report of the Committee on Credentials was concurred in by the Society.

The President—The next thing is a paper by Dr. George Sutton, of Aurora. Subject: "A Review of the Epidemics that have occurred in Southeastern Indiana during the last fifty years, and observations on the changes of type in our Epidemic Diseases."

Dr. Sutton read his paper.

Dr. Sutton—Mr. President, Dr. Gatch has furnished a very valuable report on diphtheria and spotted fever, and I would like to have him read the same himself; it is short, and will take but a few moments.

By consent of the Society Dr. Gatch read his paper.

The President—Gentlemen, you have now heard Dr. Sutton's paper, and as we are about an hour behind time, we have no time to discuss the paper. The question will be, Shall this paper be referred to the Committee on Publication?

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On motion Dr. Sutton's paper was referred to the Committee on Publication.

The President—The next business will be a paper by Dr. Mary F. Thomas, of Richmond. Subject: "Some Thoughts on Post Partum Hemorrhage."

Dr. Thomas—Mr. President and Gentlemen, There is one matter I should like to speak of before reading my paper. Those of you who were present in 1880 will remember that I read a paper before this Society, recommending the employment of women in insane hospitals for women. From that time to this some of us have been investigating this matter in the State, and others have been, and have reported from time to time to this Association. A year ago there was a lady physician appointed in the insane asylum, Dr. Sarah Stockton. While it was an experiment here, it was one that has been tried in other States successfully, and to-day I met the Superintendent, Dr. Fletcher, and asked him if Dr. Sarah Stockton was a success in the asylum? And he said: "A complete success." I am thankful for this, and I am glad that this asylum in Indiana has inaugurated such a grand movement, and I want the members to know that it is a success.

Dr. Thomas then read her paper.

The President—Gentlemen, you have heard the paper of Dr. Thomas read. We have two other papers on the same subject. I think it is best to save time and to discuss all three at once, consequently, the question will be on the reference of Dr. Thomas' paper to the Committee on Publication.

By consent the paper was referred to the Committee on Publication.

The President—The next is a paper on the same subject, by Dr. Hibberd, of Richmond.

Dr. Hibberd read his paper, which was, on motion, referred to the Committee on Publication.

The President—We will now hear Dr. Moses Baker's paper on the same subject, "Post Partum Hemorrhage."

Dr. Baker read his paper, which was, on motion, referred to the Committee on Publication.

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The President—The next paper will be by Dr. George J. Cook, of Indianapolis, subject, "Excision of Cancer of the Rectum."

Dr. Cook read his paper, which was discussed, and, on motion, referred to the Committee on Publication.

Whereupon the Society adjourned until 8 o'clock P. M.

EVENING SESSION.

8 O'CLOCK, P. M.

Society was called to order by the President.

The President—The first business for the evening is a paper by Dr. Weist, of Richmond. He has gone home, but will be back to-morrow, and has changed places with Dr. W. H. Myers, of Ft. Wayne, who will give his paper on "Ganglions."

Dr. Myers read his paper, which was discussed, and on motion, referred to the Committee on Publication.

The President—The next paper is one by Dr. George F. Chittenden, of Anderson, subject, "A Case of Compound Dislocation of the Knee Joint."

Dr. Chittenden read his paper, which, on motion, was referred to the Committee on Publication.

The President—The next business will be a paper by Dr. Joseph Eastman, of Indianapolis, subject, "Abdominal Surgery, with Cases."

Dr. Eastman read his paper, which was discussed, and, on motion, referred to the Committee on Publication.

The President—We are now through with the programme for the evening. I understand that Dr. Hibberd, of Richmond, has a paper which has not been read before his county society. What is the pleasure of the Society regarding it?

On motion Dr. Hibberd was requested by the Society to read his paper upon the "Local Treatment of Carbuncle"

The President—You have heard Dr. Hibberd's paper; what shall be done with it?

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Dr. Pearse—Mr. President, I move that the rule in regard to publishing papers that have not been read before the county societies be temporarily suspended for this evening.

The motion was carried.

Dr. Sutcliffe—Mr. President, I move that the paper of Dr. Hibberd be referred to the Committee on Publication.

The motion was carried.

Whereupon the Society adjourned until 8:30 Thursday morning.

THIRD DAY.

THURSDAY, MAY 14, 1885, 8:30 A. M.

The President—The Society will please come to order. The first business this morning is the reading of a paper by Dr. J. R. Weist, of Richmond. subject, "The Surgical Treatment of Epilepsy." Dr. Weist is not here, but his paper is; what is the pleasure of the Society regarding it?

Dr. Hobbs—Mr. President, I move that Dr. Weist's paper be read by title, and referred to the Committee on Publication.

The motion was carried.

The President—The next paper is one by Dr. E. E. Glover, of Terre Haute, subject, "The Excision of Internal Hemorrhoids." The paper is here, what shall be done with it?

On motion the paper was read by title and referred to the Committee on Publication.

The President—The next will be a paper by Dr. S. C. Weddington, of Jonesboro, subject, "Tumors of the Breast."

Dr. Weddington read his paper, which, on motion, was referred to the Committee on Publication.

The President—Dr. Weddington has another paper on the programme, subject, "Post Partum Hemorrhage."

On motion this paper was read by title, and referred to the Committee on Publication.

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On motion the Society then went into executive business.

Dr. D. J. Loring—Mr. President, I wish to offer the following resolutions:

Resolved, That the number of days of each session of this Society shall, in future, be two instead of three.

Resolved, That section 11, By-Laws, requiring that all papers intended to be read before this Society shall be in the hands of the committee at least twenty-five days before the annual meeting of this Society, shall be enforced, and that the committee be instructed in the future to reject all papers whereof the author has not fully complied with this section.

Dr. Stevens—I move that the resolutions be adopted.

The motion was carried.

Dr. Elder—Mr. President, there are now more papers referred to the Committee on Publication than the Society has money to pay for publishing, and I now move you that the Committee on Publication be instructed to return all papers that exceed three thousand words in length to their authors, with the request that they cut them down to that length, and in case they refuse to do so the paper shall not be published.

Dr. Weddington—I am in favor of the motion, and I would like to add an amendment that the Publication Committee be instructed to reject all papers that they think not of general interest.

The amendment was carried, and the motion as amended was carried.

The President—We will now hear a paper by Dr. J. S. Gregg, of Ft. Wayne, subject, "A Case of Locomotor Ataxia."

Dr. Gregg read his paper.

Dr. David C. Bryan—Mr. President, I move that the paper be referred to the Committee on Publication, with instructions to print that part of it recounting his own case, and that part quoting the authorities need not be printed.

The motion was carried.

The President—The next paper is one by Dr. Norman Teal, of Kendallville, subject, "The Medical Witness."

Dr. Teal—Mr. President, I am present, but coming in at this late hour I had scarcely expected to read my paper. I have the paper prepared for reading, if it be the pleasure of the Society to hear it.

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Dr. Maxwell—I move that the paper be read by title and referred to the Committee on Publication.

The motion was carried.

On motion, the paper of Dr. J. J. Garver, of Indianapolis, subject, "Asiatic Cholera," was read by title and referred to the Committee on Publication.

A telegram from the Allen County Society was here read, extending to Dr. J. S. Gregg hearty congratulations.

The President here announced the following

COMMITTEES.

ETHICS.

F. S. Newcomer, Indianapolis. H. D. Wood, Angola.
I. E. Lyons, Huntington. F. W. Beard, Vincennes.
Wm. Flynn, Marion.

ARRANGEMENTS.

Jno. H. Oliver, Indianapolis. G. V. Woollen, Indianapolis.
Jno. Chambers, Indianapolis. D. C. Bryan, Indianapolis.
L. L. Todd, Indianapolis.

PUBLICATION.

E. F. Hodges, Indianapolis. E. S. Elder, Indianapolis.
A. Maxwell, Indianapolis. G. W. H. Kemper, Muncie.
W. H. Shulse, Lebanon.

NECROLOGY.

J. F. Hibberd, Richmond.

Dr. Elder—Mr. President, The exhibitors have given the Society $25 in consideration of the Society furnishing them room for exhibits.

The Society returned thanks to the exhibitors for the same.

The President—Gentlemen, allow me to introduce to you Dr. J. S. Gregg, your incoming President, who will address you.

Dr. Gregg—Mr. President and Gentlemen of the Society—I think I was never placed in a more embarrassing situation than I was yesterday in the room of the Committee on Nominations. I happened to be a member of that Committee myself, but had I the slightest suspicion that my name would be

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announced for nomination, I certainly would not have been present. After I found that my friends persisted in presenting it they forbade me the privilege of retiring, and to my surprise, they placed me in nomination. I thought I had already had all the honors that I deserved thrust upon me in being made your Vice President the present year. It is, I believe, the first instance that has occurred in which the Vice President has been promoted in the regular order to the higher position of President, and certainly I feel most grateful for this high compliment paid to me. I feel my inability to do justice, especially in my present state of health. I hope, however, that my health will enable me to meet with you next year, to do all I can for you, depending upon your sympathy to aid me. And I hope that we may have as harmonious and profitable a meeting and session as this has been which is just now closing. Every thing has moved smoothly and harmoniously. I think I have never attended a meeting of the Society which has been more harmonious, or even so harmonious as this has apparently been, and with so little interruption of the regular programme. We are getting our work more and more systematized; the members know what is required of them, and with very few exceptions, are on hand to perform the duties which they voluntarily assume, or have selected for them.

Again thanking you for this high compliment, I take my seat.

Whereupon the Society adjourned until the second Tuesday in May, 1886.

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CONSTITUTION AND BY-LAWS

OF THE

INDIANA STATE MEDICAL SOCIETY.

ARTICLE I.

TITLE.

The name and title of this Society shall be THE INDIANA STATE MEDICAL SOCIETY.

ARTICLE II.

OBJECT.

The object of this Society shall be to provide an organization through which the regular physicians of the State may be united in one great professional fraternity for the purpose of giving frequent and emphatic expression to the views and aims of the medical profession; to supply more efficient means than have hitherto been available for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor and interests of the medical profession; for exciting and encouraging emulation and concert of action among its members; for facilitating and fostering friendly intercourse between those engaged in it; for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men; and for the promotion of all measures adapted to the relief of the suffering, and to improve the health and protect the lives of the community.

ARTICLE III.

MEMBERS.

SECTION 1. The members of this Society shall consist of delegates from the various county medical societies of this State, organized in accordance with the provisions of this Constitution, who shall serve one year, or until the others are elected to succeed him.

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SEC. 2. All members in good standing in the auxiliary county societies shall be members of this Society in all its rights and privileges, except that none but delegate members shall transact the legislative business of the session.

ARTICLE IV.

COUNTY SOCIETIES.

SECTION 1. Any incorporated county medical society whose constitution embraces the objects of this Constitution, and the code of ethics of the American Medical Association, shall, upon application, become auxiliary to the State Society, and shall be entitled to one delegate for every five members, and one for every additional fraction of more than half this number.

SEC. 2. The names of members of such county societies, with their postoffice addresses, shall be certified by their respective secretaries, and forwarded to the Secretary of the State Society, who shall enroll them in a book kept for that purpose; and each member shall be entitled to a copy of all the publications of this Society upon the payment of its assessments.

ARTICLE V.

OFFICERS.

SECTION 1. The officers of this Society shall be a President, Vice President, Secretary, Assistant Secretary, Treasurer and Librarian.

SEC. 2. Each officer shall be elected by a vote of a majority of all the delegates present, and shall serve one year, or until another is elected to succeed him. All officers elect shall enter upon the duties of their respective offices immediately on the final adjournment of each annual session of the Society.

ARTICLE VI.

DUTIES OF OFFICERS.

SECTION 1. The President shall preside over the meetings, preserve order, call meetings, when in his judgment the interest of the profession may require it, and perform such other duties as custom and parliamentary usage may require.

SEC. 2. The Vice President shall assist the President in the performance of his duties, and, in his absence, preside over the meetings.

SEC. 3. The Secretary shall keep correct minutes of the proceedings of the Society, and, when approved, fairly transcribe them in a book kept for that purpose. He shall have charge of all books and papers belonging to the Society, excepting such as may properly belong to the Treasurer and Librarian, receive all moneys due the Society, and turn them over to the Treasurer, keeping an account of the same; perform all other duties which the usage of corporate or organized bodies may require, and serve as a member of the Committee on Publication.

SEC. 4. The Assistant Secretary shall assist the Secretary in the performance of the duties of his office.

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SEC. 5. The Treasurer shall receive all moneys due the Society, and pay all bills approved by the Finance Committee and countersigned by the President, keeping a correct account, and making a full detailed report of the same to the annual meeting of the Society, and serve as a member of the Committee on Publication.

SEC. 6. The Librarian shall have charge of the books, manuscripts (not specially belonging to the Secretary and Treasurer), instruments, specimens, preparations, and other scientific property belonging to the Society, keeping a complete catalogue of the same, and report the condition of his department to the annual meetings of the Society.

SEC. 7. The officers shall deliver all records, books, papers, funds and other property belonging to their several offices, to their successors, when they shall enter upon the discharge of their respective duties.

ARTICLE VII.

STANDING COMMITTEES.

At each annual meeting the President shall appoint the following standing committees, each to consist of five members, and to serve until their successors are appointed and enter upon the discharge of their duties, viz.: A Committee on Arrangements, a Committee on Credentials, a Committee on Finance, a Committee on Ethics, and a Committee on Publication.

ARTICLE VIII.

DUTIES OF THE STANDING COMMITTEES.

SECTION 1. The Committee on Arrangements shall, if no sufficient reasons prevent, be mainly composed of members at the place where the next annual meeting is to be held, and provide suitable rooms and accommodations for the meeting, and in all matters, not otherwise provided for, superintend and protect the general interests of the Society.

SEC. 2. The Committee on Credentials shall examine and report upon the validity of the credentials of the delegates from the county societies.

SEC. 3. The Committee on Finance shall superintend the monetary affairs of the Society, inspect and audit all bills and the accounts of the Treasurer, and recommend the assessment of such *pro rata* tax upon its members as may be required to defray the current and incidental expenses of the Society.

SEC. 4. The Committee on Ethics shall examine and report, for the action of the Society while in attendance upon its meetings, all cases of appeals from the county societies, and complaints against members for non-professional conduct.

SEC. 5. The Committee on Publication, of which the Secretary and Treasurer shall be members, shall have charge of preparing for the press, and of publishing and distributing such of the proceedings, transactions and memoirs of the Society as may be ordered for publication. It shall supervise and edit all papers presented to the Society and ordered to be published, and report its doings to each annual meeting.

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SEC. 6. The standing committees shall keep regular minutes of their proceedings, and furnish an authenticated copy thereof, to be deposited with the Librarian.

ARTICLE IX.

VACANCIES.

All vacancies in offices, occurring in the interim of the meetings, shall be filled by appointment of the President.

ARTICLE X.

QUORUM.

SECTION 1. Two-thirds of all the delegates shall constitute a quorum competent to alter or amend the constitution.

SEC. 2. One-half of the delegates reported to the Secretary at any meeting shall constitute a quorum to transact any business, except to alter or amend the constitution.

ARTICLE XI.

POWERS AND DUTIES.

SECTION 1. The Society shall have full power, and it shall be a part of its duties, to adopt such measures as may be deemed most efficient for mutual improvement, and for exciting a spirit of emulation among the members of the profession; for facilitating the dissemination of useful knowledge; for promoting friendly intercourse among its members; for the advancement of medical science, and for securing the objects set forth in Article II of the constitution.

SEC. 2. It shall have powor to censure or expel any member convicted of violating its provisions, or who may be guilty of any act which may be considered derogatory to the honor of the medical profession; to hear and decide appeals coming from auxiliary societies, and enforce the observance of the code of ethics.

SEC. 3. It shall have power to raise money of its members by a tax which shall not exceed three dollars annually upon each member.

SEC. 4. The Society shall hold at least one meeting annually, and more, if deemed necessary for the promotion of its interests

SEC. 5. It shall adopt a seal as the insignia of its corporate authority.

SEC. 6. The time and place of each succeeding meeting shall be determined by a vote of the Society.

ARTICLE XII.

FUNDS.

The funds of the Society shall be applied exclusively to the promotion of its objects, as set forth in Article II of this constitution.

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ARTICLE XIII.

CODE OF ETHICS.

The Society adopts, as a part of its regulations, the code of ethics of the American Medical Association.

ARTICLE XIV.

AMENDMENTS.

Every proposition for altering and amending the constitution shall be made in writing, and if such alteration or amendment receive the unanimous vote of all the delegates present, it shall be adopted; but if objection be made, it shall lie over until the next annual meeting, when, if it receive two-thirds of the quorum for amending the constitution, it shall be adopted.

ARTICLE XV.

SEAL.

The seal of the Indiana State Medical Society shall consist of a circular disc, two inches exterior diameter, with an ornamental border or margin. Within this outer margin shall be, in Roman letters, "Indiana State Medical Society. Organized MDCCCXLIX." Within this another circle, with the motto in Latin, Roman letters, "Physiologica medicina cautionis et curæ morborum vera scientia est." The center is occupied by figures of Esculapius with staff and scroll, Hygeia casting away the serpent, surrounded on base and sides by a wreath of leaves; to the rear and right of the figure of Esculapius an owl is perched.

The following is an impression of said seal:

INDIANA STATE MEDICAL SOCIETY
MEDICINA CAUTIONIS ET CURAE MORBORUM VERA SCIENTIA EST PHYSIOLOGICA
ORGANIZED MDCCCXLIX

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BY-LAWS.

ORDER OF BUSINESS.

SECTION 1.

1. The President shall call the meeting to order.
2. The Secretary shall call the roll of delegates.
3. The Chair shall appoint the Committee on Credentials, which shall report as soon as convenient.
4. Report of Committee on Arrangements.
5. Any business requiring early consideration may, by permission, be introduced.
6. Reading such parts of the minutes of the last meeting as may be necessary for the information of the Society, such parts of said minutes to be selected in advance by the Secretary.
7. Report of the Secretary.
8. Report of the Treasurer.
9. Report of the Librarian.
10. Report of Committee on Publication.
11. President's address, if for the exclusive hearing of the Society; otherwise, the fixing of the time for hearing said address.
12. Chair to appoint Committee on Ethics, which shall report as soon as convenient.
13. Chair to appoint Committee on Finance, to report as soon as convenient.
14. Reading of papers that have been forwarded by county medical societies, and such as have been prepared by special appointments.
15. Election of officers.
16. Introduction of new business.
17. Selection of time and place for next annual meeting.
18. Chair to appoint Committee of Arrangements.
19. Chair to appoint Committee on Publication.
20. Miscellaneous business.
21. Adjournment.

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LAW OF ORDER.

SEC. 2. The deliberations of this Society shall be governed by parliamentary usage, as contained in Roberts' Rules of Order, unless otherwise determined by a vote of the Society.

REPORT OF PROCEEDINGS.

SEC. 3. The Secretary shall employ a short-hand reporter at an expense not exceeding ten dollars per day, to report to him the proceedings of the Society, and such report, when revised by him, he shall submit to the Publishing Committee for preparation for publication in the Transactions.

CONCERNING MEMBERS.

SEC. 4. The names of all members in good standing, and of all honorary members, shall be published annually in the Transactions.

SEC. 5. Every county society shall, at least thirty days before the annual meeting of this Society, make a full and correct catalogue of its members in good standing at the time, and transmit the same at once to the Secretary of this Society. If the name of a member is omitted from this catalogue that was contained in the last preceding catalogue, the county society must explain the omission by stating whether the member whose name is omitted is dead, has withdrawn, has been expelled, suspended, or whatever is the fact; and no one not a member in good standing in his county society can be a member of this Society.

SEC. 6. The names of members who have served this Society as President or Vice President be incorporated in the Transactions annually, prefacing the list of members, and showing the year in which they served.

APPEALS.

SEC. 7. Any member of a county society who has been expelled, or otherwise brought under discipline and condemned, shall have the right of appeal to this Society.

ASSESSMENTS.

SEC. 8. All assessments of money made by this Society shall be *per capita* on all the members of all the county societies, and each county society shall collect the assessment on its members and forward the same to the Secretary of this Society within the time named, and any county society that fails to comply with this requirement shall be held to be in contempt, and none of its members shall be allowed to participate in the business of this Society until such county society shall have purged itself of the contempt.

SEC. 9. The annual assessment on each member of the county societies for the use of this Society shall be one dollar, which shall be forwarded to the Secretary of this Society with the annual catalouge of members, as provided in Section V hereof.

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DELEGATES AND PAPERS.

SEC. 10. The delegates to this Society shall be appointed by the county societies at the time the county societies are required to make this annual catalogue of members, and the names of the delegates, one of whom shall be designated to act as a member of the Nominating Committee to be appointed at the next meeting of the Society, shall be forwarded to the Secretary of this Society as soon as they are appointed.

Regarding the appointment of delegates to the American Medical Association, hereafter the several county societies shall be required, at the time of appointing their delegates to this Society, to nominate and forward to the Secretary of this Society the names of delegates to the American Medical Association, the number of such nominations to be governed by the rules of said association; and all the nominations for such delegates shall be confirmed by this Society, which shall have power to fill all vacancies and supply all omissions of the county auxiliaries.

The names of all the delegates to the American Medical Association, appointed by the different county societies must be sent to the Secretary of the State Medical Association at least thirty days, with report of delegates, etc., before the yearly meeting of said State Society.

No voluntary papers shall be read before this Society, or printed in the Transactions, unless such paper shall have been read before the society of the county in which the author lives, and by such county society referred to this Society, and no paper so referred shall occupy more than twenty minutes of time in its reading.

SCIENTIFIC BUSINESS.

SEC. 11. The scientific communications to this Society shall consist of such papers as the county societies may order to be presented here, and the report of such special committees as may be appointed to write on selected subjects, and voluntary papers.

SEC. 12. The Committee of Arrangements shall examine all the papers submitted to them under the provisions of Section X, and determine the order in which they shall be presented to the Society. The Committee of Arrangements shall have printed a programme of business for the use of members at each annual meeting.

AUXILIARY SOCIETIES.

SEC. 13. Any county society desiring to become auxiliary to this Society may file a certificate of its compliance with the conditions of Article IV of the constitution, and the Secretary of this Society shall be the judge of the sufficiency of such certificate until the next meeting of this Society.

PUBLICATION COMMITTEE.

SEC. 14. The Committee on Publication shall construe Section V of Article VIII of the constitution to authorize them to alter, curtail or reject any and all papers referred to them that do not belong to the business proceedings of the Soci-

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ety; and any paper referred to them which they deem meritorious, but not suitable for publication in the Transaction, they may, in their discretion, return it to its author and authorize him to offer it to a medical journal for publication, with the announcement that it has been read before the Indiana State Medical Society.

AMENDMENT TO SECTION 11.—All such papers shall be sent to the Chairman of the Committee of Arrangements at least twenty days before the annual meeting of this Society.

AMENDMENT TO SECTION 5.—Where a member of an auxiliary society has had any right of membership abolished or abridged, on account of non-payment of a pecuniary obligation to such society, such member shall be restored to all rights thus abolished or abridged by the payment of such obligation at any time before such society makes its next annual report to this Society, and such member may be restored at any time thereafter on a majority vote of such society and the payment of such obligations.

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LIST OF MEMBERS

OF THE

INDIANA STATE MEDICAL SOCIETY.

ALLEN COUNTY.

Officers.

I. M. Rosenthal, Pres.
K. K. Wheelock, Sec.
B. S. Woodworth, Treas.

Censors.

C. B. Stemen,
J. S. Gregg,
M. F. Porter.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ayres, H. P	Fort Wayne	1866	Honorary.
Brooks, Wm. H	Fort Wayne	1866	
Buchman, Alpheus P	Fort Wayne	1876	
Brown, Alfred J	Heller's Corner	1881	Removed to Kansas.
Dills, Thomas J	Fort Wayne	1876	
Devilbiss, A	Fort Wayne	1884	
Fleming, W. L	Fort Wayne	1885	
Gregg, Jas. S	Fort Wayne	1866	
Greenawalt, George L	Fort Wayne	1883	
Greenwell, Franklin		1884	Dropped.
Knode	Fort Wayne	1885	
Mayer, Carl F	Fort Wayne	1866	Deceased.
Myers, Wm. H	Fort Wayne	1866	Dropped.
Myers, Herschel S.	Fort Wayne	1881	Dropped.
McCaskey, G. W	Fort Wayne	1881	
McCullough, H	Fort Wayne	1883	
McCausland, G. W	Fort Wayne	1884	Dropped.
Proegler, Carl	Fort Wayne	1879	
Porter, Miles F	Fort Wayne	1881	
Rosenthal, J. M	Fort Wayne	1866	
Ruhl, W. D	Sheldon	1884	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Schmidt, Charles	Fort Wayne	1866	Honorary.
Sledd, S. D	Nine Mile	1881	Dropped.
Stemen, Christian B	Fort Wayne	1878	
Sweringen, Hiram V	Fort Wayne	1878	
Vanbuskirk, A. E	Fort Wayne	1884	Dropped.
Woodworth, B. S	Fort Wayne	1866	
Wheelock, K K	Fort Wayne	1885	
Worden, J. W	Fort Wayne	1884	Dropped.

BARTHOLOMEW COUNTY.

Officers.

N. S. Winteroud, Pres.
J. J. Riley, Vice Pres.
Geo. T. McCoy, Sec.
J. S. Arwine, Treas.

Censors.

W. H. Lopp,
D. S. Armor,
R. G. Regennas.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Arnold, J. W.	Columbus	1885	
Armor, D. S	Columbus	1882	Withdrawn.
Arwine, J. S	Columbus	1881	
Banker, A. J	Columbus	1881	
Burns, R.	Waymansville	1881	Removed to Kansas.
Butler, C. H	Clifford	1881	
Clark, C. S	Columbus	1881	
Coopenrider, J	Madison	1881	Dues unpaid and re-
Cosby, G O	Burnsville	1881	[moved to Madison.
Falk, F	Columbus	1881	
Ford, ——	Mt. Auburn, Shelby Co.	1883	Dues unpaid.
Hawley, K. D	Elizabethtown	1882	
Hillagoss, E. W. S	Hope	1881	Withdrawn.
Jones, T. S	Flatrock, Shelby Co	1883	Dues unpaid.
Linton, S. M	Columbus	1881	Withdrawn.
Lopp, W. H	Columbus	1881	Asst. Sec. S. S, 1884.
McCleod, A. J	Columbus	1881	
McCoy, Geo. T	Columbus	1884	
Norton F. D	Petersville	1881	
Pfeiffer, R. N	Hope	1884	
Regennas, R. G	Hope	1883	
Riley J. J	St. Louis Crossing	1881	
Smalley J. K	Newbern	1884	
Smith, T. R.	South Bethany	1881	
Voris, S. M.	Columbus	1881	
Winteroud, N. S	Hope	1881	

Society meets on the third Tuesday of each month

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BENTON COUNTY.

Officers.

J. W. Green, Pres.
A. W. Wells, Sec.
J. S. Mavity, Treas.

Censors.

J. A. Gray,
J. M. G. Beard,
J. Kolb.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Beard, J. M. G	Ambia	1875	
Gray, J. A	Otterbein	1875	
Green, J. W	Boswell	1875	
Kolb, J	Oxford	1874	
Mavity, J. S	Fowler	1876	
Moore, A. V	Fowler	1883	Suspended.
Wells, A. W	Oxford	1874	
Whitcomb, J. H	Boswell	1875	

Our Society meets on the first Tuesday in May and the last Tuesday in October. Called sessions are in order at any time, and are frequently made.

BLACKFORD COUNTY.

Officers.

W. W. Wilt, Pres.
C. R. Mason, Vice Pres.
J. R. Harrold, Sec.
L. C. Landon, Treas.

Censors.

H. C. Davisson.
J. R. Harrold.
L. C. Landon.

Members

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Clouser, N. D	Hartford City	1885	
Davisson, H. C	Hartford City	1866	
Drayer, Peter	Hartford City	1866	
Hammon, E. W	Montpelier	1883	
Harrold, J. R	Roll	1881	
Landon, L. C	Priam	1874	
Mason, C. R	Hartford City	1870	
Morrison, J. A	Montpelier	1885	
Shull, C. Q	Montpelier	1866	
Wilt, W. W	Montpelier	1873	

Our Society meets on fourth Thursday of each month.

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BOONE COUNTY

Officers.

D. C. Schull, Pres.
J. M. Kane, Vice Pres.
Thomas H. Lane, Sec.
W. H. Shulse, Ass't Sec.
D. R. Walker, Treas.

Censors.

R. E. Jones.
J. M. Kane.
M. H. Rose.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Alford, James S	Zionsville	1879	Removed.
Bennington, A. M	Lebanon	1876	
Bounnell, Thomas A	New Brunswick	1876	
Bounnell, M. H	Lebanon	1877	
Burk, George L	Jamestown	1877	
Brown, R. A	Zionsville	1882	Removed.
Clark, A. J	Zionsville	1885	
Crafton, W. S	Lebanon	1881	
Cotton, H. T	Zionsville	1880	
Cooke, Clarke	Whitestown	1884	Removed.
Duzan, George W	Zionsville	1877	
Heady, W. S	Jamestown	1877	
Hardy, J. S	Whitestown	1877	
Hamilton, James A	Northfield	1879	Dropped.
Jones, R. E	Lebanon	1880	
Kane, John M	Northfield	1884	
Lane, Thomas H	Lebanon	1873	
Miller, A. O	Lebanon	1882	Dropped.
Nickey, A. S	Elizaville	1877	
Porter A. G	Lebanon	1873	
Porter, John R	Lebanon	1873	
Porter, Wm. D	Lebanon	1877	
Rose, M. H	Thorntown	1873	
Shulse, W. H	Lebanon	1873	
Sims, John F	Thorntown	1873	Removed.
Smith, C. H	Lebanon	1874	
Steelsmith, John M	Terhune	1877	
Schull, D. C	Lebanon	1879	
Trowbridge, R	Lebanon	1880	Removed.
Walker, D. R	Reese's Mills	1878	
Ware, W. H	Cason	1884	

Our Society meets on first Tuesday in January, April, July and October.

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CASS COUNTY.

Officers.

F. A. Busjahn, Vice Pres.
J. Z. Powell, Sec.
J. E. Sterritt, Treas.

Censors.

D. N. Fansler.
N. W. Cady.
H. C. Lester.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bell, W H	Logansport	1873	
Busjahn, F. A	Logansport	1878	
Cady, N. W	Logansport	1877	
Fansler, D. N	Logansport	1880	
Herman, John	Logansport	1874	
Hunter, W. B	Logansport		
Lester, H. C	Logansport	1880	
Powell, J. Z	Logansport	1874	
Price, C. A	Logansport	1880	Removed.
Sterritt, J. E	Logansport	1881	
Stevens, B. C	Logansport	1873	
Thomas, James	Royal Center	1881	

Our Society meets on the last Thursday of each month.

CLARK COUNTY.

Officers.

G. W. Haymaker, Pres.
S. C. McClure, Vice Pres.
I. N. Ruddell, Sec.
N. Field, Treas.

Censors.

M. D. Fouts.
W. H. Sheets.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Beckwith, L. W	Jeffersonville	1877	Suspended.
Covert, G. M	Sellersburg	1885	
Curtis, G. L	Jeffersonville	1883	Honorary.
Fouts, W. D	Jeffersonville	1877	
Field, N	Jeffersonville	1877	President, 1868.
Graham, T. A	Jeffersonville	1877	
Haymaker, G. W	Charlestown	1882	
McBride, C. R	Jeffersonville	1877	Suspended.
McClure, D	Jeffersonville	1877	
McClure, S. C	Jeffersonville	1879	Suspended.
McClure, J. D	Jeffersonville	1884	
McCoy, W. N	Jeffersonville	1877	
McKinney, M. V	Jeffersonville	1882	
Ruddell, I. N	Jeffersonville	1881	
Sheets, W. H	Jeffersonville	1877	
Williams, L. L	Utica	1882	

This Society meets on the second Wednesday of October, 1885.

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CLINTON COUNTY.

Officers.
Oliver Gard, Pres.
W. T. Cooper, Vice Pres.
J. S. McMurray, Sec.
J. M. C. Adams, Treas.

Censors.
C. Chittick.
Wm. Strange.
G. W. Brown.
S. O. Knapp.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Adams, J. M. C	Frankfort	1880	
Brown, G. W	Frankfort	1880	
Bogan, E. W	Kirklin	1880	
Cooper, W. T	Circleville	1881	
Cox, T. B	Frankfort	1880	
Chittick, Charles	Burlington	1883	
Chittick, A. J	Hillsburg	1885	
Dunn, W. P	Frankfort	1880	
Fall, W. D	Kirklin	1880	
Gentry, J. M	Frankfort	1880	
Gard, Oliver	Frankfort	1880	
Holmes, J. H	Manson	1881	
Knapp, S. O	Frankfort	1885	
McMurray, J. S	Frankfort	1880	
Morrison, O. A. J	Middle Fork	1880	
Parker, Joseph	Colfax	1883	
Schwir, E. E	Kirklin	1883	
Smith, H. G	Circlesville	1880	
Strange, Wm	Frankfort	1880	
Trobeaugh, W. A	Cutler.	1883	
Yonkey, W. P	Rossville	1885	

This Society meets on first Thursday in May, August, November and February.

DEARBORN COUNTY.

Officers.
D. H. James, Pres.
Conley Heaton, Vice Pres.
Fred. Treon, Sec. and Treas.

Censors.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bond, R. C	Aurora	1867	
Bond, E. P	Lawrenceburg	1844	
Bowers, H. J	Moore's Hill	1867	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Barkley, John	Farmer's Retreat	1881	
Brodbeck, W. H., D. D. S	Aurora	1884	
Craig, T. E	Manchester	1867	
Collins, S. H	Lawrenceburg	1882	
Dunn, W. H	Wilmington	1878	Suspended.
Davis, J. R	Morris	1877	Honorary.
Fermier, P	Weisburg	1872	
Freeman, E. D	Osgood	1884	Honorary.
Gatch, J. D	Lawrenceburg	1872	Vice President, 1879.
Heaton, Conley	Moore's Hill	1878	
Haines, H. B	Aurora	1867	
Harding, M. H	Lawrenceburg	1844	Pres. '65, V.P. '53–'55.
Henry, W. C	Aurora	1872	
James, D. H	Aurora	1881	
Kyle, T. M	Manchester	1869	
Lamb, James	Aurora	1868	
Miller, C. B	Lawrenceburg	1867	
Newforth, C	Sunman	1885	Honorary.
Liddle, John	Bright	1883	Suspended.
Rectanus, F	Aurora	1867	
Rosser, David	Moore's Hill	1884	
Smith, T. C	Aurora	1878	
Sutton, George	Aurora	1844	Pres. '70, V. Pres. '55.
Sutton, H. H	Aurora	1879	
Spaulding, John	Hartford	1878	Honorary.
Terrill, W. H	Petersburg, Ky	1867	Honorary.
Terrill, W. M	Lawrenceburg	1880	
Treon, Fred	Aurora	1879	
Vincent, H. C	Guilford	1867	
Walters, C. G	Lawrenceburg	1867	

This Society meets on last Tuesday of each month.

DECATUR COUNTY.

Officers.

W. H. Wooden, Pres.
D. J. Ballard, Vice Pres.
J. V. Schofield, Sec.
R. M. Thomas, Treas.

Censors.

E. W. Leach.
J. L. Wooden.
Wm. Bracken.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Alexander, John H	Clifty	1877	
Ballard, D. J	Saint Paul	1883	
Bobbitt, John H	Greensburg	1877	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bracken, Wm.	Greensburg	1877	
Charlton, N. E	Forest Hill	1880	
Crawford, G. S	Clifty	1885	Reinstated.
Dowden, A. W	New Point.	1878	
Leach, E. W	Shelbyville	1881	
Scoby, D. L.	Greensburg	1885	
Schofield, J. V	Harris City	1879	
Smith, J. L	Clarksburg	1882	
Swem, E. B.	Greensburg	1877	
Tevis, Joel T	Saint Paul.	1882	
Thomas, R. M.	Sandusky	1883	
Webb, W. H	Adams	1877	
Wooden, J. L	Greensburg	1877	
Wooden, W. H	Greensburg	1879	

This Society meets on first Monday of every month.

DEKALB COUNTY.

Officers.

J. H. Ford, Pres.
Jos. S. Barnett, Vice Pres.
F. W. Fanning, Sec.
J. B. Casebeer, Treas.

Censors.

D. J. Swartz.
B. S. Sheffer.
J. B. Bennett.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Barnett, Jos. S	Butler	1882	
Bennett, Jos. B	Butler	1882	
Casebeer, J. B.	Auburn	1882	
Chamberlain, Jas. N	Waterloo	1883	
Darby, A. Byron	Waterloo	1883	
Elson, R	Auburn	1882	
Fordick, Edwin L	Butler	1882	
Fanning, Fred. W.	Butler	1882	
Ford, J. H	Auburn	1882	
Lewis, James V.	Auburn	1883	
Littlefield, J. J	Auburn	1882	
Madden, Wm. H	Butler.	1882	
Matheny, T. G	Auburn	1882	
Swartz, D. J	Auburn	1882	
Swartz, Mrs. V. M	Auburn	1882	
Seabring, D. A	Auburn	1882	
Sheffer, B. S	Blair	1882	

This Society meets on first Thursday of each month.

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DELAWARE COUNTY.

Officers.

A. H. Good, Pres.
G. R. Green, Vice Pres.
C. W. Smith, Sec.
G. W. H. Kemper, Treas.

Censors.

T. J. Bowles.
O. I. Reasoner.
S. Martin.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armitage, D. R	Muncie	1878	
Bowles, T. J	Muncie	1879	
Boyden, W. J	Muncie	1878	
Bradbury, A. B	Muncie	1879	
Day, B. F.	Harrison	1882	
Downing, J. R	Reed's Station	1882	
Eastes, W. T	Wheeling	1883	
Good, A. H	Selma	1882	
Green, George R	Royerton	1879	
Jump, Samuel V	New Burlington	1878	
Kemper, G. W. H	Muncie	1878	Treas. State Soc. 1884.
Martin, Simeon	Daleville	1884	
Munsey, D. O	New Corner	1878	
Murray, A. P	Albany	1882	
Murray, A. L	Eaton.	1878	
Marshall, R	Cowan	1881	
Reasoner, O. I	Shideler.	1879	
Ross, Jont	Blountsville	1880	
Read, H. G	Albany	1883	Removed.
Skiff, Clark	Selma	1878	
Smith, Charles W	Muncie	1884	
Winton, Robert	Muncie	1878	

This Society meets on first Tuesday of January, March, May, July, September and November.

DUBOIS COUNTY.

Officers.

E. J. Kemph, Pres.
Fred Rust, Vice-Pres.
C. C. McCown, Sec.
W. H. Wells, Ass't Sec.
G. P. Williams, Treas.

Censors.

T. Wertz,
W. R. M'Mahan,
A. E. Glezen.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Demott, W. M	Haysville	1874	
Glezen, A. E	Ireland	1874	
Hatfield, B. F	Jasper	1884	Suspended.

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Kempf, E. J	Ferdinand	1878	
Kempf, P. H	Ferdinand	1882	
Knapp, Charles	Evansville	1874	Withdrawn.
Lemmons, W. W	Portersville	1882	Removed.
M'Mahan, W. R	Huntingburg	1874	
McCown, C. C	Ireland	1884	
Montgomery, I. B	Huntingburg	1884	
Parr, G. L	Ireland	1875	
Rust, Frederick	Holland	1874	
Salb, J. P	Schnellville	1881	
Schwartz, C. W	Huntingburg	1874	
Stork, H. W	Holland	1878	
Wells, W. H	Jasper	1883	
Wertz, T	Jasper	1874	
Williams, G. P	Huntingburg	1874	

This Society meets in June and October.

ELKHART COUNTY.

Officers. *Censors.*

J. A. Work, Pres.
F. C. Eckelman, Vice Pres.
W. A. Neal, Sec.
C. S. Frink, Treas.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bowers, C. C	Bristol	1882	
Cummins, S. M	Elkhart	1882	
Dunning, L. H	South Bend	1882	
Eckelman, F. C	Elkhart	1882	
Frink, C. S	Elkhart	1882	
Harding, P. D	Goshen	1882	Withdrawn.
Harrington, O. B	Elkhart	1882	
Heatwole, J. H	Goshen	1882	
Jennings, J. W	Millersburg	1882	
Kilmer, S. L	South Bend	1882	Withdrawn.
Latta, M. M	Goshen	1882	V. P. State Soc., '58.
Miles, F. L	Elkhart	1882	
Montgomery, H. T	Wakarusa	1882	
Neal, W. A	Elkhart	1882	
Sensenich, A. S	Wakarusa	1883	
Short, S. B	Elkhart	1882	
Work, J. A	Elkhart	1882	

This Society meets on the second Tuesday in June, October, December, February and April.

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FAYETTE COUNTY.

Officers.

G. R. Chitwood, Pres.
S. D. Shepard, Vice Pres.
L. D. Dillman, Sec.
Joshua Chitwood, Treas.

Censors.

C. Wyman,
J. E. Chitwood,
Wm. J. Pepper.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Chitwood, G. R	Connersville	1879	
Chitwood, Joshua	Connersville	1879	
Chitwood, John E	Connersville	1879	
Chitwood, F. A	Connersville	1884	
Dillman, L. D	Connersville	1882	
Gregg, V. H	Connersville	1879	
Hamilton, S. N	Connersville	1879	
Pepper, William J	Connersville	1879	
Phares, O. P	Alquina	1884	
Pigman, Garrett	Connersville	1883	Removed.
Shepard, S. D	Everton		
Sipe, R. W	Orange	1882	
Wyman, Charles	Lyons Station	1880	

This Society meets on the first Tuesday of each month.

FLOYD COUNTY.

Officers.

C. P. Cook, Pres.
A. Neat, Vice Pres.
W. L. Starr, Sec. and Treas.

Censors.

W. A. Clapp.
G. H. Cannon.
R. C. Knoefel.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Alexander, S. J	New Albany	1878	
Bowman, Chas	New Albany	1878	
Burney, W. A	New Albany	1880	
Cannon, G. H	New Albany	1878	
Clapp, W. A	New Albany	1878	
Cook, C. P	New Albany	1883	
Davis, J. M	Greenville	1880	
Easley, E. P	New Albany	1878	
Knoefel, R. C	New Albany	1883	
McIntyre, C. W	New Albany	1882	
Neat, A	New Albany	1878	
Neat, T. C	New Albany	1881	
Nutt, C. N	New Albany	1878	Deceased.
Sloan, John	New Albany	1878	
Stewart, J. L	New Albany	1878	
Starr, W. L	New Albany	1881	
Taggart, W. J	Galena	1881	

This Society meets on the first Thursday in each month, at 10 o'clock A. M.

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FOUNTAIN COUNTY.

Officers.
W. C. Cole, Pres.
S. Jones, Sec.
C. D. Watson, Treas.

Censors.
A. M. Rupert
G. C. Hays.
S. McNeil.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Austin, Charles B	Veedersburgh	1882	
Cole, William C.	Attica.	1867	
Davidson, John F.	Wallace	1880	
Fine, Ephraim M	Steam Corners	1869	
Goodin, Goldsmith	Veedersburgh	1881	
Hays, George C	Hillsboro	1867	
Johnson, Charles S	Harveysburgh	1876	
Jones, Sprosan	Covington	1867	
Lyons, L. D	Attica	1867	
McNeil, Scott	Stone Bluff	1876	
Mock, John W	Covington	1878	
Moore, Patrick B	Harveysburgh	1882	
Orrahood, Job D	Snoddy's Mills	1884	Suspended.
Petro, Benjamin L	Covington	1869	Removed.
Quinn, James W	Fountain P. O	1876	Suspended.
Richardson, A. G	Veedersburgh	1869	Rem'd; dues unpaid.
Rowland, George	Covington	1867	
Rupert, Archie M	Attica	1878	
Spining, John N	Covington	1878	
Stout, William R	Hillsboro	1882	
Watson, Charles D	Covington	1867	

This Society meets on the first Thursday in April and October, and at such other times as may be designated by the Society, or by call of the President.

FRANKLIN COUNTY.

Officers.
H. G. Averdick, Pres.
T. J. McCarty, Vice Pres.
G. B. Buckingham, Sec.
R. J. Owens, Treas.

Censors.
E. L. Patterson.
R. J. Owens.
J. L. Hendricks.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Averdick, H. G	Oldenburgh	1880	
Buckingham, G. B.	Brookville	1880	
Berry, George	Brookville	1880	Dues unpaid.

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Cupp, M. L	Metamora	1883	
Conner, Thomas H	Metamora	1881	
Colscott, T. A	Brookville	1882	Honorary.
Gifford, Thomas, Sr	Laurel	1880	Dues unpaid.
Gifford, Thomas, Jr	Laurel	1880	Dues unpaid.
Hendricks, J. I.	Fairfield	1881	Dues unpaid.
Maddaux, D. T	Fairfield	1884	Dues unpaid.
Mann, E. B	Oldenburg	1884	
McCarty, T. J	Brookville	1882	
Morgan, J. O	Springfield		
Owens, R. L	Cedar Grove	1882	
Patterson, E. L	Laurel	1880	
Schum, Charles	St. Peters	1880	Dues unpaid

This Society meets on first Tuesday in every month.

GIBSON COUNTY.

Officers.

W. R. Genung, Pres.
G. C. Fisher, Vice Pres.
A. R. Burton, Sec.
G. C. Kendle, Treas.

Censors.

P. Ottman.
J. F. Gudgel.
George H. Kendle.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Blair, W. W	Princeton	1874	
Burton, A. R	Princeton	1882	
Fisher, G. C	Patoka	1884	
Genung, W. R	Ft. Branch	1882	
Gudgel, J. F	Hazleton	1877	
Kendle, G. C	Princeton	1882	
Kidd, W. G	Princeton	1874	
Maghee, W. H	Princeton	1881	Withdrawn.
Malone, J. A	Princeton	1874	
Mason, G. C	Oakland City	1880	
Maxam, F. H	Princeton	1877	
Munford, S. E	Princeton	1874	
Ottman, P	Haubstadt	1881	
Patten, J. C	Francisco	1874	Suspended.
Sears, G. M	Patoka	1880	
Shoptaugh, S. H	Princeton	1874	
Thomas, G. A	Haubstadt	1882	
Ward, J. P	Princeton	1884	
West, V. T	Princeton	1874	

This Society meets on the last Friday in each month.

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GRANT COUNTY.

Officers.

A. A. Hamilton, Pres.
Wm. Flynn, Sec.
L. Williams, Treas.

Censors.

G. W. Daniels.
A. Henley.
O. L. Stout.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Anderey, Oscar	New Cumberland	1884	
Barnes, W. C	Mier	1875	
Conwell, L. V	Van Buren	1883	
Corey, Lavanner	Van Buren	1862	
Corey, Lewis J	Van Buren	1875	
Daniels, G. W	Marion	1877	
Egbert, George	Marion	1881	Honorary.
Flynn, William	Marion	1876	
Hamilton, A. A	Marion	1872	
Henley, Alpheus	Fairmount	1866	
Hess, Luther P	Marion	1866	
Hall, John W	Sweetser	1882	
Hanmore, John	Jalapa	1884	
Home, Samuel S	Jonesboro	1869	
Hollis, Samuel	Upland	1881	
Haines, Nathaniel P	Roseburg	1884	
Hubbard, William H	Fairmount	1884	
Jackson, L. M	Jonesboro	1883	
Knight, John C	Jonesboro	1882	
Lomax, William	Marion	1848	
Lenox, Frank	Swazie	1879	
Lord, J. Levi	Point Isabel	1882	
Mannring, N. H	Rigdon P. O	1876	Removed.
Meek, John A	Jonesboro	1859	
Moore, Charles V	Fairmount	1878	
McKinney, G. W	Jonesboro	1879	
Reasoner, Harmon D	Marion	1866	
Shively, James S	Marion	1848	
Shively, Marshall T	Marion	1874	
Seal, I. N	Hackleman	1878	
Stout, O. L	Upland	1883	
Weddington, S. C	Jonesboro	1871	
Williams, Lewis	Marion	1857	
Wharton, W. L	New Cumberland	1882	
Williamson, P. E	Sweetser	1883	
Whitson, Eli M	Jonesboro	1883	

This Society meets on the fourth Tuesday of each month, except August and September.

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HAMILTON COUNTY.

Officers.

P. P. Whitesell, Pres.
J. M. Gray, Vice Pres.
W. B. Graham, Sec.
A. D. Booth, Treas.

Censors.

F. M. Warford.
E. C. Loehr.
J. M. Gray.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Barber, J. M	Arcadia	1875	Dues unpaid.
Benson, J. L	Westfield	1873	Dues unpaid.
Booth, A. D	Noblesville	1875	
Davenport, H. E	Sheridan	1873	Dues unpaid.
Dove, S. C	Westfield	1873	
Driver, I. C	Shielsville	1880	Dues unpaid.
Graham, W. B	Noblesville	1873	
Gray, J. M	Noblesville	1873	
Haworth, M. C	Noblesville	1873	Dues unpaid.
Herr, H. T	Westfield	1885	
Hershea, K. C	East Branch	1879	Dues unpaid.
Johnson, H. V. V	McMinville, Oregon	1883	Hon'ry; dues unpaid.
Loehr, E. C	Noblesville	1873	Dues unpaid.
McShane, J. T	Carmel	1883	
Meisse, A	Noblesville	1884	Dues unpaid.
Murphy, I. M	Arcadia	1882	
Saunders, Isaac	Cicero	1883	Dues unpaid.
Stout, H. H	Cicero	1873	
Sutphen, J. S	Noblesville	1882	Dues unpaid.
Tucker, A. R	Cicero	1873	
Parr, J. N	Jollietville	1873	
Pettijohn, A	Arcadia	1873	Dues unpaid.
Pettijohn, J. B	Westfield	1874	Dues unpaid.
Warford, F. M	Cicero	1873	
Whitesell, P. P	Clarksville	1873	

HANCOCK COUNTY.

Officers.

M. M. Hess, Pres.
F. F. Hervey, Vice Prest.
Warren R. King, Sec. and Treas.

Censors.

J. M. Eley.
E. I. Judkins.
Wm. Pearson.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bell, W. S	Greenfield	1882	
Ely, J. M	Sugar Creek P. O	1874	
Ely, L. C	Sugar Creek P. O	1884	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Hervey, F. F	Maxwell	1881	
Howard, N. P., Sr	Greenfield	1874	V. P. '77.
Howard, N. P., Jr	Greenfield	1879	
Judkins, E. I	Greenfield	1874	
King, Warren R	Philadelphia	1877	
Martin, S. M	Greenfield	1874	
Pearson, Wm	Fount'wn, Shelby co	1874	No Society in county.
Ryan, W. B	Willow Branch	1881	
Stewart, J. G	Fortville	1874	Suspended.
Stewart, A. A	Fortville	1883	Suspended.
Hess, M. M	Cleveland	1883	
Troy, S. A	Milner's Corner	1874	
Whetsel, Frank F	Morristown, Shelby Co.	1884	No Soc. in county. [Suspended.

This Society meets on the first Tuesday of each month.

HENDRICKS COUNTY.

Officers.

B. Bartholomew, Pres.
M. T. Lawson, Vice Pres.
C. E. Farabee, Sec. and Treas.

Censors.

W. J. Hoadley.
M. G. Parker.
A. Heavenridge.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Barker, Joel	Brownsburg	1876	
Bartholomew, B.	Danville	1876	
Brill, J. H	Pittsboro	1876	
Carter, A	Plainfield	1883	
Davidson, A	Brownsburg	1880	
Dryden, T. J	Clayton	1876	
Depew, M. F	Danville	1881	Removed.
Farabee, C. E	Danville	1880	
Green, J. N	Stilesville	1876	Suspended.
Hoadley, W. J	Danville	1876	
House, G. F. H	Pecksburg	1880	
Heavenridge, A	Stilesville	1876	
Hurt, G. K	New Winchester	1883	Removed.
Kennedy, L. H	Danville	1876	
Lawson, W. T	Danville	1879	
Osborn, J. A	Stilesville	1876	Expel'd; unpaid dues.
Parker M. G	Danville	1877	
Ragan, J. S	Avon	1879	
Strong, J. T	Plainfield	1883	
Smith, F. W	Plainfield	1876	Suspended.
White, C. A	Danville	1883	

This Society meets on the third Tuesday in April, July, October and January.

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HENRY COUNTY.

Officers.

G. W. Burke, Pres.
O. E. Holloway, Vice Pres.
John Rea, Sec. and Treas.

Censors.

W. A. Boor,
O. J. Gronendyke,
E. S. Ferris.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Anderson, John T	Honey Creek	1881	
Barrett, E. H	Greensboro'	1885	
Burke, G. W	Newcastle	1879	
Boor, W. F	Newcastle	1879	
Boor, W. A	Newcastle	1879	
Benedict, H	Springport	1879	
Bailey, Rachel S	Spiceland	1880	
Bailey, G. D	Spiceland	1879	
Crouse, Henry M	Knightstown	1882	
Cochrane, James	Spiceland	1879	
Ferris, Samuel	Newcastle	1879	
Ferris, E. S	Newcastle	1885	
Gronendyke, T. W	Newcastle	1879	
Gronendyke, O. J	Newcastle	1885	
Hess, F. C	Cadiz	1882	
Hobbs, Wilson	Knightstown	1879	
Holloway, O. E.	Knightstown	1885	
Jackson, F. G	Mt. Summit	1883	
Mendenhall, E. T	Newcastle	1879	Expelled.
Pickering, Samuel	New Lisbon	1882	
Resoner, Wm. M	Sulphur Springs	1879	
Rea, John	Newcastle	1879	
Rea, Charles T	Rogersville	1884	
Rea, George N	Newcastle	1879	Deceased.
Zimmerman, G. W	Cadiz	1879	Removed.

This Society meets on the second Thursday of April, June, August, October, December and February.

HOWARD COUNTY.

Officers.

O. C. Johnson, Pres.
A. J. Bates, Vice Pres.
J. C. Thorn, Sec.
J. O. Garr, Treas.

Censors.

J. H. Bersh,
R. H. Smith.
Th. Kern.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armstrong, E. A	Kokomo	1864	
Bersh, J. H	Kokomo	1883	
Bates, A. J	Kokomo	1883	
Conner, Levi	Jerome	1880	
Covalt, A. A	Greentown		
Dayhuff, A. F	Kokomo	1854	Deceased.
Garr, J. O	Kokomo	1884	
Hull, W. H	Center	1884	
Johnson, T. C	Kokomo	1854	
Kern, Lewis	Kokomo	1858	
Kern, Theo	Kokomo	1877	Suspended.
Lovett, J. A	Kokomo	1883	
Moulder, Thos	Russiaville	1880	Suspended.
Moulder, J. McLean	Kokomo	1875	
Martin, T. W	Ervin	1865	
Martin, John H. L	Arcadia	1880	
Miller, L. C	Alto	1867	
Moore, J. B	Kokomo	1878	
Payne, A. J	Russiaville	1884	Suspended.
Payton, W. B	Greentown	1882	
Richmond, C	Kokomo	1854	Honorary.
Scott, Wm	Kokomo		
Scott, Jas. T	Greentown	1864	
Scott, G. B	Greentown	1868	
Shirley, D. J	New London	1864	
Smith, R. H	Kokomo	1880	
Thorn, J. C	Kokomo	1884	
Ware, C. M	West Liberty	1869	Suspended.
Wilson, R. Q	Kokomo	1866	

This Society meets June 10.

HUNTINGTON COUNTY.

Officers.

W. F. Carson, Pres.
B. H. B. Grayston, Sec.
John S. Sprowl, Treas.

Censors.

H. C. Gemmill.
A. J. Boswell.
G. D. Trembly.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Brandon, W. S	Plum Tree	1883	
Boswell, A. J	Andrews	1883	
Bucher, J. C	Andrews	1883	
Carson, W. F	Roanoke	1883	
Chafee, W. C	Huntington	1883	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Eversole, Charles	Pleasant Plain	1883	
Gemmill, H. C	Markle	1883	
Good, Charles H	Warren	1883	Removed.
Grayston, B. H. B	Huntington	1883	
Grayston, Charles E	Huntington	1883	
Grayston, F. S. C	Huntington	1883	
Hupp, Samuel	Warren	1883	
James, Martin	Andrews	1883	Suspended.
Kilander, W. J	Markle	1883	
Lyons, I. E	Huntington	1883	Honorary.
Lyons, W. B	Huntington	1883	Honorary.
Leyman, Emery H	Huntington	1883	
Martin, A. G	Roanoke	1883	Withdrawn.
Mitchell, S. P	Mt. Ætna	1883	
Palmer, E. M	Warren	1883	
Stauffer, W. O	Nappanee	1883	Removed.
Scott, Joseph	Markle	1883	Honorary.
Scott, N. W	Mt. Ætna	1883	
Severance, La Grange	Huntington	1883	
Shaffer, A. H	Huntington	1883	
Smith, Isaac A	Majenica	1883	Withdrawn.
Sprowl, John S	Warren	1883	
Trembly, G. D	Bracken.	1883	
Williams, O. B	Andrews	1883	
Wright, Ervin	Roanoke	1883	

This Society meets on the second Tuesday in each month.

JACKSON COUNTY.

Officers.

N. N. Shipman, Pres.
W. M. Rodman, Vice Pres.
R. A. Woods, Sec. and Treas.

Censors.

Jos. A. Stilwell.
T. S Galbraith.
W. E. Whitehead.

Members.

NAMES.	RESIDENCE.	ADMITTED	REMARKS.
Anthony, J. R	Tampico	1883	
Bain, Wm. C. A	Brownstown	1876	
Barnes, G. O	Courtland	1877	
Boaz, M. L	Brownstown	1877	
Charlton, S. H	Seymour	1876	
Coryell, Samuel	Crothersville	1879	
Cummings, D. J	Houston	1876	
Cummings, H. A	Mooney	1884	
Galbraith, T. S	Seymour	1876	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
May, G. W	Mooney	1876	
Oppenheimer, L. S	Seymour	1880	Removed.
Osterman, A. G	Dudleytown	1882	Removed.
Orvis, G. Q	Seymour	1885	
Reed, E. P	Ewing	1876	
Rodman, Wm. M	Ewing	1878	
Ruddick, L.	Redington	1882	
Rains, G. W	Courtland	1881	
Stilwell, Joseph A	Brownstown	1876	
Shields, John T	Seymour	1877	
Shipman, N. N	Seymour	1880	
Shields, James M	Seymour	1884	
Tinch, E. T	Freetown	1876	
Wilson, M. V	Medora	1876	
Woods, R. A	Seymour	1884	
Whitehead, W. E	Brownstown	1879	

This Society meets on the first Thursday in March, June, October and December.

JAY COUNTY.

Officers.	*Censors.*
C. S. Arthur, Pres.	G. W. Fertich.
J. G. Sims, Sec.	C. W. Mackey.
Samuel Mason, Treas.	P. Dickes.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ahle, O. E	Brant	1885	
Arthur, Christopher S	Portland	1881	
Bosworth, Jacob M	Pennville	1883	Unpaid dues.
Clevenger, Benjamin J	Redkey	1881	
Conner, F. C	Redkey	1881	
Dickes, Philip	Boundary	1881	
Fertich, G. W	Dunkirk	1883	
Horn, Wm. C	Pennville	1881	Expelled.
Kinsey, David S	Portland	1881	
Kidder, James F	New Mt. Pleasant	1882	
Mason, Samuel	Pennville	1883	
Mackey, Charles W	Portland	1884	
Roy, N. E	Greene	1885	Dues unpaid.
Shepherd, Thomas S.	Portland	1883	
Sims, J. G	Portland	1885	
Stanton, David S	Portland	1881	

This Society meets on the second Friday of each alternate month, beginning with April.

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JENNINGS COUNTY.

Officers.

Nehemiah Richardson, Pres.
J. Frank Mitchell, Vice Pres.
James P. Cope, Sec. and Treas.

Censors.

Nelson D. Gaddy.
Jonathan A. Spencer.
Will H. Richardson.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Cope, James P	Vernon	1883	
Gaddy, Nelson D	Lovett	1883	
Gaddy, Orville	Paris Crossing	1884	
Green, Charles H	North Vernon	1883	
Green, James H	North Vernon	1884	
Lyle, John M	Cana	1884	Removed.
Mitchell, J. F	Vernon	1883	
Mitchell, Walter J	Vernon	1884	
Richardson, Nehemiah	Vernon	1883	
Richardson, Will. H	Vernon	1883	
Spencer, Jonathan A	San Jacinto	1883	

Regular meetings of Jennings County Medical Society are second Saturday in April, first Saturday in September, and Anniversary, November 22.

JEFFERSON COUNTY.

Officers.

James R. Lewis, Pres.
J. H. Matthews, Sec. and Treas.

Censors.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Cornett, W. T. S	Madison	1874	Pres. in 1852.
Forshee, Thomas W	Madison	1882	
Lewis, James R	Madison	1874	
Lewis, George W	Kent	1883	
Matthews, J. H	Madison	1874	
McCoy, Wm. A	Madison	1882	
Wright, C. H	North Madison	1874	

JOHNSON COUNTY.

Officers.

W. A. Webb, Pres.
Howard Thompson, Sec.
J. T. Jones, Treas.

Censors.

B. Wallace.
R. D. Willan.
E. Whitesides.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Carnes, Z	Greenwood	1880	
Covert, G. W	Whiteland.	1880	
Donnell, T. C	Franklin	1880	
Dobyns, P. K	Whiteland	1882	
Farris, J. S	Bargarsville	1880	
Hall, Homer J	Franklin	1880	
Hendricks, W. C	Greenwood	1880	
Jones, J. T	Franklin	1880	
Marshall, J. A	Nineveh	1880	
Miller, A	Whiteland	1880	
Payne, P. W	Franklin	1880	
Province, Wm. M	Providence	1880	
Ream, J. B	Trafalgar	1881	
Sadler, J. J	Edinburg	1880	
Thompson, Howard	Franklin	1882	Removed.
Wallace, Barnett	Franklin	1880	
Willan, R. D	Trafalgar	1881	
Wood, J. C	Franklin	1880	
Webb, W. A	Franklin	1881	
Whitesides, Everet.	Edinburg	1884	

KNOX COUNTY.

Officers.

J. W. Milam, Pres.
F. W. Beard, Sec.
J. H. Hensley, Treas.

Censors.

G. L. Dorsey.
B. F. Keith.
W. B. Harris.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Anderson, W. B	Edwardsport	1879	
Beard, F. W	Vincennes	1875	Sec. since org.
Beven, J. C	Vincennes	1875	
Busse, E. P	Vincennes	1885	
Beard, S. C	Vincennes	1885	
Bedell, W. B	Vincennes	1885	
Davis, Royse	Deckers	1873	
Dorsey, G. L	Bicknell	1885	
Fairhurst, O	Vincennes	1875	
Folks, C. A	Vincennes	1885	
Grigsby, W. B	Oaktown	1882	
Harris, W. B	Vincennes	1875	
Harris, F. M	Vincennes	1879	
Harrison, S. L	Vincennes	1876	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Hensley, J. H	Vincennes	1881	Treasurer.
Haughter, A. J	Oaktown	1875	
Keith, B. F	Edwardsport	1875	
Milam, J. W	Bruceville	1881	
Martin, W. T	Lovely Dale	1875	
Owings, T. B	Oaktown	1882	
Pugh, J. W	Oaktown	1875	
Reel, E	Bicknell	1877	Died.
Randolph, A. J	Vincennes	1880	
Smith, H. M	Vincennes	1875	
Staley, L. B	Bicknell	1885	

This Society meets on first Tuesday in April, July, October and January.

KOSCIUSKO COUNTY.

Officers.

B. Burket, Pres.
J. B. Hazel, Vice Pres.
T. J. Shackleford, Sec.
J. H. Davisson, Treas.

Censors.

H. M. Swygert.
I. B. Webber.
F. M. Pearman.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bash, Joseph M	Warsaw	1878	
Becknell, Irvin J	Milford	1878	
Burket, Calvin W	Warsaw	1875	
Burket, Benjamin	Warsaw	1879	
Brown, George W	Claypool	1883	
Cammack, Thomas	Milford	1876	
Collar, A R	Syracuse	1880	Dues unpaid.
Davenport, Theodore	Warsaw	1857	Deceased.
Davisson, J. H	Warsaw	1876	
Gilpin, E. P	Milford	1879	Dues unpaid.
Hazel, John B	Claypool	1881	
King, H. O	Pierceton	1881	
Long, Charles R	Pierceton	1881	
Moody, Theodore F	Pierceton	1882	
Moro, Frances	Warsaw	1883	
Pearman, Frances M	Palestine	1878	
Peck, Chas. F	Bourbon	1876	Removed.
Seymour, Wm. P	Warsaw	1876	Removed.
Shackleford, T. J	Warsaw	1881	
Swygart, H. M	Atwood	1884	
Terry, D. E	Silver Lake	1881	
Webber, Irvin B	Warsaw	1875	

The Society meets on the second Thursday of each month.

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LAGRANGE COUNTY.

Officers.

C. D. Goodrich, Pres.
S. A. Work, 1st Vice Pres.
C. H. Niman, 2d Vice Pres.
John L. Short, Sec.
H. M. Casebeer, Treas.

Censors.

E. G. White.
H. M. Casebeer.
F. H. Broughton.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Broughton, F. H	Walcottville	1884	
Casebeer, H. M	Lagrange	1878	
Dayton, George H	Lima	1877	
Dancer, John	South Milford	1877	
Goodrich, C. D	Lima	1880	
Hughes, William	Lima	1877	
Niman, Jonas P	Lagrange	1977	
Niman, Charles H	Lagrange	1881	
Short, William H	Lagrange	1877	
Short, John L.	Lagrange	1877	
Spaulding, A. M	Brushy Prairie	1877	
Shrock, H. W	Lake Shore	1880	
White, E. G	Lagrange	1877	
Work, Samuel A	Wolcottville.	1883	

Our Society meets on April 29, July 30, and October 28, in 1885, and January 27, 1886.

LAWRENCE COUNTY.

Officers.

H. Dixon, Pres.
H. Stillson, Sec.
S. W. Bullitt, Ass't Sec.
S. A. Rariden, Treas.

Censors.

H. Stillson.
J. H. Faucett.
S. W. Smith.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Allen, E	Fayetteville	1871	
Bare, Addison W	Bryantsville	1862	Honorary.
Bulkley, L. D.	Danville, Ill.	1882	Honorary.
Burton, George C	Mitchell	1882	Honorary.
Burton, John	Georgia	1853	
Burton, George W.	Mitchell	1862	Honorary.
Burton, Isom	Mitchell	1866	Honorary.
Burton, W. A	Mitchell	1862	
Biggs, J. T	Mitchell	1853	Honorary.

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Berry, A. F	Springville	1875	
Bullitt, T. W	Rivervale	1883	
Crim, L. A	Bedford	1876	Honorary.
Dixon, H. C	Tunnelton	1876	
Ellison, W. T	Heltonville	1879	
Faucett, J. H	Fayetteville	1883	
Gaddy, N. D	Lovett		Honorary.
Gardner, Joseph	Bedford	1875	Honorary.
Gibson, E. P	Hoosier Prairie, Ill.	1875	Honorary.
Gibson, John	Georgia	1885	
Hon, B. J	Orleans	1881	Honorary.
Howard, S. B	Tunnelton	1882	
Huffstetter, A. J.	Orleans	1883	Deceased.
Hunter, F. S	Ft. Ritner	1882	Honorary.
Judah, Winepark	Guthrie	1877	Honorary.
Kelly, John C	Mitchell	1882	Honorary.
Kimberlin, H. L	Mitchell	1862	Honorary.
Laughlin, E. D	Orleans	1881	V. P. '76—Honorary.
Larkin, J. B	Mitchell	1862	
Laforce, H. C	Bedford	1876	Honorary.
Mayfield, R. N	Springville	1881	Honorary.
McDonald, A. J.	Mitchell	1882	
McIntire, E. S	Mitchell	1866	
Newland, Ben	Bedford	1853	Pres., '78; V. P. '58-'63
Phipps, J. M	Heltonville	1876	
Pearson, J. C	Mitchell	1875	
Rariden, S. A	Bedford	1883	
Rariden, C. E	Bedford	1881	
Smith, W. A	Leesville	1853	
Smith, S. W	Leesville	1853	
Stillson, Joseph	Bedford	1853	
Stillson, Hamilton	Bedford	1882	
Voyles, H	Fayetteville	1884	
Yost, J. L. W	Mitchell	1875	
Yandell, W.	Huron	1875	

This Society meets on the first Thursday of June, September, December and March.

MADISON COUNTY.

Officers.

Wm. Suman, Pres.
O. Broadbent, Vice Pres.
J. Stewart, Sec.
W. A. Hunt, Treas.

Censors.

John W. Cook.
W. M. Garretson.
J. Saunders.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Alexander, L. E	Pendleton	1880	
Brandon, J. F	Anderson	1884	
Broadbent, Oliver	Anderson	1875	
Brown, Martin	Linwood	1880	Suspended.
Carter, D. M	Anderson	1882	
Chittenden, G. F	Anderson	1875	
Cook, Ward	Pendleton	1875	
Cook, John W	Pendleton	1877	
Diven, C. E	Anderson	1880	
Edwins, S. W	Frankton	1878	Suspended.
French, W. J	Frankton	1885	
Fussell, Lundy	Markleville	1877	
Garretson, W. M	Perkinsville	1882	
Harter, J. H	Anderson	1879	
Harter, Wm. P	Anderson	1879	
Hunt, Wm. A	Anderson	1875	
Hunt, J. W	Alexandria	1879	
Jones, Horace E	Anderson	1875	
Morgan, Wm. J	Gilman	1875	Suspended.
Perry, J. W	Alexandria	1875	
Perry, A. J	Alexandria	1884	
Saunders, Joseph	Anderson	1881	
Spann, B. F	Anderson	1875	
Stephenson, Joseph	Pendleton	1880	
Stewart, Jonas	Anderson	1875	
Suman, William	Anderson	1875	
Swallow, George E	Summitville	1880	
Van Metre, I. N	Florida	1879	
Wickersham, N. L	Anderson	1875	
Williams, Charles F	Markleville	1882	Removed.

The Society meets on first Wednesday in January, April, July and October.

MARION COUNTY.

Officers.

T. N. Bryan, Pres.
A. W. Brayton, Vice Pres.
F. M. Ferree, Sec.
J. O. Stillson, Ass't Sec.
L. M. Rowe, Treas.

Censors.

L. L. Todd.
G. V. Woolen.
Geo. J. Cook,
L. D. Waterman.
F. S. Newcomer.
R. E. Houghton.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Allen, Wesley	West Newton	1878	
Barnes, C. A	Brightwood	1878	
Bigelow, J. K	Indianapolis	1876	Vice Pres. 1873.
Brayton, A. W	Indianapolis	1881	
Brown, J. B	Indianapolis	1883	
Bryan, T. N	Indianapolis	1875	Pres. 1885.
Bell, Guido	Indianapolis	1883	
Bates, J. W	Broad Ripple	1885	
Bryan, D. C	Indianapolis	1885	
Brennan, E. J	Indianapolis	1885	
Carson, L. O	Traders' Point	1879	
Chambers, Jno	Indianapolis	1875	Pres. 1884.
Chatard, Rt. Rev. Bishop	Indianapolis	1880	Honorary member.
Coble, Geo			Suspended.
Combs, G. W	Indianapolis	1884	
Comingor, J. A	Indianapolis	1875	
Cook, G. J	Indianapolis	1882	
Crist, D. O	Indianapolis	1879	
Curtis, G. L	Jeffersonville	1882	Honorary member.
Davis, Samuel	Indianapolis	1879	
Dunlap, J. M	Indianapolis	1883	
Daniels, E. A	Indianapolis	1885	
Earp, S. E	Indianapolis	1882	
Eastman, Jos	Indianapolis	1875	
Elder, E. S	Indianapolis	1876	Sec. State Med. Soc.
Featherston, J. R	Indianapolis	1875	
Ferguson, F. C	Indianapolis	1882	
Ferree, F. M	Indianapolis	1882	Sec. 1885.
Field, E. W	Indianapolis	1883	
Field, M. H	Indianapolis	1875	
Fletcher, C. I	Indianapolis	1881	
Fletcher, W. B	Insane Hospital	1875	
French, Mrs. Mattie	Indianapolis	1885	
Garver, J. J	Indianapolis	1881	
Gaston, J. M	Indianapolis	1884	Honorary member.
Hadley, E	Indianapolis	1875	
Harvey, T. B	Indianapolis	1875	V. P. '65; Pres. '80.
Haslep, Marie	Indianapolis	1884	
Haughton, R. E	Indianapolis	1876	Pres. '74; V. P. '59.
Haymond, W. S	Indianapolis	1880	
Hays, W. F	Indianapolis	1881	
Henthorne, L. S	Indianapolis	1878	
Hervey, J. W	Indianapolis	1875	
Haugh, J. A	Indianapolis	1883	Suspended.
Hodges, E. F	Indianapolis	1880	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Hoss, J. V	Indianapolis	1882	Suspended.
Hubbard, W. H	Indianapolis	1879	Rem'd to Grant Co.
Hunt, P. G. C	Indianapolis	1882	Honorary member.
Hurty, J. N	Indianapolis	1882	Honorary member.
Jameson, H	Indianapolis	1875	
Jameson, P. H	Indianapolis	1875	
Jeffries, W. E	Indianapolis	1875	
Keegan, John	Indianapolis	1885	
Kitchen, Jno. M	Indianapolis	1878	
Lewis, E. R	Indianapolis	1884	
Lockridge, J. E	Indianapolis	1884	Suspended.
Long. J. B	Indianapolis	1884	
Lutz, G. W	Indianapolis	1882	Suspended.
Marsee, J. W	Indianapolis	1878	
Maxwell, Allison	Indianapolis	1878	
Metcalf, C. N	Indianapolis	1885	
McDonald, W. B	Augusta	1882	Suspended.
Mills, Seth	Valley Mills	1875	Removed.
Morgan, W. V.	Julietta	1883	
Morrison, F. A	Indianapolis	1881	Suspended.
Morrow, J. E	Indianapolis	1883	
Newcomer, F. S	Indianapolis	1875	
Oliver, D. H	Indianapolis	1875	
Oliver, J. H	Indianapolis	1881	
Pantzer, H. O	Indianapolis	1882	Suspended.
Partlow, J. W	Indianapolis	1882	Suspended.
Patterson, A. W	Indianapolis	1878	
Pearson, C. D	Indianapolis	1882	
Pettijohn, O. B	Indianapolis	1882	
Pfaff, O. G	Indianapolis	1884	
Porter, C. N	Indianapolis	1882	Suspended.
Porter, E. D	Indianapolis	1883	Suspended.
Raymond, H	U. S. A	1883	Removed.
Roergen, John P	Indianapolis	1885	
Rooker, J. I	Castleton	1880	
Rooker, C. N	Castleton	1884	
Rowe, L. M	Indianapolis	1882	Treasurer.
Sloan, G. W	Indianapolis	1882	
Spicer, J. W	Acton	1883	
Stratford, J. W	Indianapolis	1885	
Stevens, Thad.	Indianapolis	1875	
Stillson, J. O	Indianapolis	1884	Asst. Sec.
Stockton Sarah	Indianapolis	1884	
Stone, R. F	Indianapolis	1881	
Swain, F	Indianapolis	1883	Suspended.
Sutcliffe, J. A	Indianapolis	1878	

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NAEES.	RESIDENCE.	ADMITTED.	REMARKS.
Taylor, J. H	Indianapolis	1880	
Thomas, A. J	Insane Hospital	1880	
Thomas, W. H	Indianapolis	1885	
Thompson, D. A	Indianapolis	1883	
Thompson, J. L	Indianapolis	1876	
Todd, L. L	Indianapolis	1875	
Van Vorhis, F. J	Indianapolis	1875	V. P. '81.
Wagner, Theo A	Indianapolis	1884	
Walker, I. C	Indianapolis	1875	
Wands, William	Indianapolis	1875	Suspended.
Waterman, L. D	Indianapolis	1875	President in 1877.
Whiteneck, J. H	Glen's Valley	1882	Suspended.
Wishard, G. W	Indianapolis	1882	
Wishard, W. H	Indianapolis	1875	
Wishard, W. N	City Hospital	1875	
Woolen, G. V	Indianapolis	1875	Pres 1883.
Wright, Appleton H	Indianapolis	——	
Wright, A. R	Indianapolis	1884	Removed.
Wright, C. E	Indianapolis	1884	Suspended.
Woodburn, J. H	Indianapolis	1875	V. P. in 1866; Pres. [St. Med. Soc. 1884.

This Society meets every Tuesday at 7:30 P. M.

MARSHALL COUNTY.

Officers.	*Censors.*
T. T. Linn, Pres.	O. A. Rea,
A. B. Younkman, Vice Pres.	R. B. Short,
J. H. Wilson, Sec. and Treas.	J. A. Sutton.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Borton, T. A	Plymouth	1881	
Doke, J. T	Tiosa	1878	Suspended.
Eidson, J. W	Bourbon	1884	
Gould, S. W	Argos	1878	
Hamilton, J. J	Plymouth	1880	Withdrawn.
Holtzendorff, A. C	Plymouth	1881	
Leland, J. S	Argos	1878	
Linn, T. T	Bourbon	1881	
Moody, G. W	Bremen	1880	Removed.
Moore, Allen	Lapaz	1883	
Parks, B. W	Bourbon	1882	
Rea, O. A	Marmont	1880	
Reynolds, G. R	Plymouth	1878	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Stevens, O. P	Maxinkukee	1878	
Short, R. B	Bourbon	1882	
Sutton, J. A	Argos	1884	
Wahl, George F	Bremen	1884	
Wilson, J. H	Plymouth	1878	
Wiseman, B. W. S	Marmont	1879	
Younkman, A. B	Bremen	1880	

This Society meets annually April 10, 1884, and on second Thursday of every third month after.

MARTIN COUNTY.

Officers.	*Censors.*
James K. Walker, Pres.	H. W. Shirley.
G. W. Walls, Vice Pres.	I. N. Plummer.
C. H. Yenne, Sec. and Treas.	S. H. Brittain.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Brown, D. C	Shoals	1880	Deceased.
Brittain, S. H	Loogootee	1880	
Campbell, J. C. L	Loogootee	1880	Suspended.
Dollins, T. C	Trinity Springs	1880	Suspended.
McClure, C. B	Shoals	1880	Suspended.
Oppelt, E. A	Loogootee	1880	
Plummer, I. Nut	Shoals	1881	
Plummer, R. S	Shoals	1880	Suspended.
Poindexter, W. F	Shoals	1880	Deceased.
Shirley, H. W	Shoals	1880	
Smith, W. X	Shoals	1880	Deceased.
Trueblood, J. C	Loogootee	1880	Suspended.
Voyles, Harvey	Trinity Springs	1880	Suspended.
Walls, G. W	Shoals	1880	
Walker, James K	Loogootee	1880	
Yenne, Charles H	Shoals	1884	

This Society meets on the first Tuesday in January, April, July and October.

MIAMI COUNTY.

Officers.	*Censors.*
W. K. Armstrong, Pres.	S. M. Finwood.
C. B. Higgins, Sec.	A. F. Smith.
E. M. Bloomfield, Treas.	J. A. Meek.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armstrong, W. K.	Mexico.	1885	
Ager, U. A	Perrysburg	1885	
Bloomfield, E. M.	Peru	1872	
Brady, C. C.	Gilead	1885	
Brenton, W. H.	Peru	1872	
Cain, J. C.	Santa Fe	1880	
Dennis, F. W	Gilead	1884	Removed.
Friermood, E. K	Amboy	1872	
Friermood, S. M.	Santa Fe	1885	
Graham, B. R.	Peru	1874	
Helm, J. H	Peru	1872	Pres. State Soc., 1875.
Higgins, C. B.	Peru	1872	
Ijams, T. F	North Grove	1885	
Litzenberger, O. P	Zenia	1885	
Meek, J. H	Bunker Hill	1872	
Marsh, S. S	Peru	1879	
McDowell, H. P.	Bunker Hill.	1885	
Pence, Rollin	Peru	1879	
Smith, A. F.	Waupecong	1885	
Wilson, W. T	Bunker Hill.	1872	

This Society meets at call of President.

MONROE COUNTY.

Officers.

George W. Bryan, Pres.
John D. Simpson, Vice Pres.
James D. Maxwell, Jr., Sec.
John E. Harris, Treas.

Censors.

Robert M. Weir.
Rice C. Harris.
James D. Maxwell, Sr.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bryan, George W	Bloomington	1876	
Dodd, James	Clear Creek	1876	
Gastin, J. H	Stanford.	1876	
Harris, R. C	Ellettsville	1876	
Harris, J. E.	Bloomington	1882	
Lowder, L. T	Harrodsburg.	1876	Delinquent.
Maxwell, James D., Sr	Bloomington.	1876	
Maxwell, James D., Jr	Bloomington.	1882	
McPheeters, Joseph G	Bloomington.	1876	
McLaughlin, C. D	Harrodsburg.	1876	Delinquent.
Simpson, John D	Harrodsburg.	1880	Delinquent.
Whitted, Wm. L.	Ellettsville	1876	
Weir, Robert M.	Bloomington.	1882	

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MONTGOMERY COUNTY.

Officers.

T. E. Griffith, Pres.
S. S. Detcheon, Vice Pres.
J. A. Ensminger, Sec.
W. L. May, Treas.

Censors.

E. W. Keegan,
T. F. Leech,
A. P. Fitch.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ball, Zopher	Waveland	1879	Delinquent.
Beatty, ——	Newmarket	1885	
Detcheon, S. S	New Richmond	1884	
Dunlavy, J. E	Waveland	1885	
Ensminger, J. A	Crawfordsville	1885	
Fitch, A. P	Waynetown	1877	
Freeman, J. W	Whitlock	1883	
Griffith, T. J	Darlington	1872	
Griffith, M. E. H	Darlington	1880	
Green, T. C	Waynetown	1884	Delinquent.
Hurt, W. J	Waynetown	1877	
Hutchings, B. F	Crawfordsville	1876	
Jones, O. H	Mace	1876	
Keegan, E. W	Crawfordsville	1879	
Leech, T. F	Waveland	1879	
May, W. L	Crawfordsville	1872	
Purviance, S. W	Crawfordsville	1872	
Ristine, W. H	Crawfordsville	1878	
Riffle, J. S	Crawfordsville	1883	Removed.
Straughn, J. W	Parkersburg	1879	
Straughn, K. K	Brown's Valley	1879	Dues unpaid.
Washburne, E. P	Linden	1882	

MORGAN COUNTY.

Officers.

J. M. Snoddy, Pres.
Grant Monical, Sec. and Treas.

Censors.

W. E. Hendricks.
P. McNabb,
C. M. Gravis.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Cure, H. W	Martinsville	——	Delinquent.
Farr, U. H	Martinsville	——	Delinquent.
Green, E. V	Martinsville	1876	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Gravis, C. M	Martinsville	——	Delinquent.
Hendricks, W. E	Martinsville	1879	
Henson, Theodore	Martinsville	1880	
Jeffries, J. E	Martinsville	——	Delinquent.
Knight, J. H	Paragon	——	Delinquent.
Lindley, C. M	Brooklyn	1876	
Monical, Grant	Brooklyn	1881	
McNabb, P	Mooresville	——	Delinquent.
Mills, ——	Monrovia	1885	
Perce, B. H	Mooresville	——	Delinquent.
Reagan, A. W	Mooresville	1876	
Robinson, H. C	Martinsville	1876	
Rundell, S. N	Cope	——	Delinquent.
Seaton, Charles	Hall	——	Delinquent.
Snoddy, J. M	Mooresville	——	Delinquent.
Van Sant, W. P	Brooklyn	——	Delinquent.

NOBLE COUNTY.

Officers.

J. L. Gilbert, Pres.
J. L. Trader, Vice Pres.
Norman Teal, Sec. and Treas.

Censors.

E. K. Strawn,
W. T. Green.
J. J. Bowker,

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Adair, Wm. Adrian	Swan	1882	Removed.
Bowker, James J	LaOtto	1882	
Broughton, F	Avilla	1885	
Carr, Geo. W	Ligonier	1882	
Depew, E. W	Wolf Lake	1882	
Franks, Wm. H	Ligonier	1883	
Gilbert, Joseph L	Kendallville	1882	
Green, Wm. T	Albion	1884	
Iddings, Homer L	Merrillville, Lake Co.	1882	
Hays, John W	Albion	1883	
Knepper, Edwin W	Ligonier	1882	
Malony, Francis C	Avilla	1882	
Palmiter, C	Ligonier	1882	
Shoble, Wm. A	Ligonier	1882	
Strawn, Enos K	Rome City	1883	
Trader, J. L	Brimfield	1882	
Tucker, H. G	Cromwell	1882	
Teal, Norman	Kendallville	1882	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Teal, Geo. A	Kendallville	1882	
Williams, Salathiel T	Kendallville	1883	
Williams, Robert B	Rome City	1884	Delinquent and sus.
Williams, W. S	Kendallville	1885	

OWEN COUNTY.

Officers.

W. V. Wiles, Pres.
J. M. Goss, Vice Pres.
Allen Pierson, Sec.
J. M. Stucky, Treas.

Censors.

S. E. Smith,
F. M. Wiles,
N. D. Cox.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Cox, N. D	Spencer	1879	
Coble, Jacob	Spencer	1885	
Culmer, George F	Odon, Daviess Co.	1883	
Goss, J. M	Freedom	1879	
Gray, O. F	White Hall	1883	
Hickam, W.	Freedom	1884	
Jones, J. M	Cataract.	1880	
Maddox, W. B. S	Vandalia	1879	
McKelvey, S. R	Patricksburg	1884	Delinquent.
Mullinix, M. G	Spencer	1879	
Pierson, Allen.	Spencer	1879	
Ritter, C. L	Gosport	1883	
Schell, Walker	Spencer	1879	
Smith, J. W	Gosport	1879	
Smith, S. E.	Gosport	1884	
Stucky, J. M	Gosport	1879	
Stucky, F. V	Gosport	1884	
Wiles, W. V	Spencer	1879	
Wiles, F. M	Spencer	1884	

This Society meets on the third Wednesday of every other month.

PARKE COUNTY.

Officers.

W. N. Williamson, Pres.
C. A. Caplinger, Vice Pres.
W. H. Gillum, Sec.
A. D. Tomlinson, Treas.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ball, J. F.	Judson	1885	
Boyd, James N	Annapolis	1879	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Caplinger, C. A	Marshall	1876	
Cross, J. F	Rockville	1874	
Dare, John S	Bloomingdale	1874	
Darroch, Wm. P.	Hollandsburg	1882	
Deverter, George D	Howard	1874	
Garrigus, J. J.	Sylvania	1882	
Gillum, William H	Rockville	1874	
Goldsberry, John A	Annapolis	1874	
Goss, Marion	Bellmore	1874	Suspended.
Harvey, J. W.	Mansfield	1878	
Hudson, B. F	Montezuma	1874	
McCord, Samuel	Judson	1883	
McKey, R. H. W	Russell's Mills	1875	
Morris, Chas. C	Rockville	1877	Suspended.
Mull, Wm. D	Rockville	1879	
Rice, H. J	Rockville	1878	
Tomlinson, A. D.	Bloomingdale	1874	
White, S. S	Judson		Removed.
Williamson, Wm. N	Sylvania	1878	

Meets first Friday of each month.

PIKE COUNTY.

Officers.

R. R. Kime, Pres. — W. H. Link, Sec.
T. W. Basinger, Vice Pres. — J. M. Beardsley, Treas.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Adams, J. R	Petersburg.	1876	
Agee, C. J	Stendal	1876	
Basinger, T. W	Oatsville	1883	
Beardsley, J. M	Winslow	1883	
Byers, A. R.	Petersburg	1876	
Daniels, David H	Otwell	1876	
DeTar, David	Winslow	1878	Removed.
Duncan, J. B	Petersburg	1879	
Fullenwider, C. J	Petersburg	1884	
Harris, R. W	Algiers	1880	
Hoover, P. N	Stendal	1879	Removed.
Hornbrook, J. T.	Union	1880	
Kime, R. R.	Union	1881	
Leslie, Alex., Sr.	Petersburg	1878	
Link, W. H.	Petersburg	1884	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Osborn, W. R	Spurgeon		Delinquent.
Phillips, R. W	Union	1876	Deceased.
Posey, J. H	Petersborough		Deceased.
Schenck, H. F	Oatsville	1876	
Smith, J. F	Glazen	1877	
Woodward, T. E	Winslow		Delinquent.

PORTER COUNTY.

Officers.

J. C. Carson, Pres.
J. H. Newland, Vice Pres.
David J. Loring, Sec.
D. D. Marr, Treas.

Censors.

J. C. Carson.
H. F. C. Miller.
R. E. Miller.
A. P. Litherman.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Arnold, George W	Valparaiso	1884	
Carson, Jos. C	Hebron	1883	
Fisher, William H	Wanatah	1883	
Gordon, P. P	Hobart	1884	
Herriott, John V	Valparaiso	1883	Delinquent.
Letherman, Andrew P	Valparaiso	1883	
Letherman, Jos. H	Valparaiso	1883	Delinquent.
Loring David J	Valparaiso	1883	
Marr, Dolos D	Chesterton	1883	
McCarthy, James F	Valparaiso	1883	
Miller, Hosia F. C	Hobart	1884	
Miller, E. R	Chesterton	1883	
Mullen, H. E	Valparaiso	1884	Delinquent.
Newland, Jas. H	Valparaiso	1883	
Yohn, W. A	Valparaiso	1884	

The regular time of meeting is the second Thursday in the following months: January, April, July and September.

POSEY COUNTY.

Officers.

S. H. Pearce, Pres.
O. T. Schultz, Vice Pres.
J. B. Weaver, Sec.
G. R. Peckenpaugh, Treas.

Censors.

D. Krawsgrill,
D. C. Ramsay,
G. W. Welborn.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ballard, S. H	Poseyville	1883	Deceased.
Bitz, L. B	Blairsville	1877	
Bucklin, G. W	New Harmony	1879	
Elliott, Cyrineus	Poseyville	1878	
Hensler, Ernst	W. Franklin	1884	
Hicks, C	Caborns	1877	
Holton, W. M	New Harmony	1877	
Kelley, F. H	Stewartsville	1877	
Krawsgrill, D	Wadesville	1879	
Montgomery, D. B	Cynthiana	1878	
Neal, Daniel	New Harmony	1878	
Owen, Richard	New Harmony	1882	Honorary.
Pearse, S. H	Mt. Vernon	1877	
Peckenpaugh, G. R	Mt. Vernon	1884	
Ramsey, D. C	Mt. Vernon	1881	
Rawlings, S. O	New Harmony	1878	
Rutledge, J. C	Poseyville	1878	
Spencer, E. V	Mt. Vernon	1877	
Schultz, O. T	Mt. Vernon	1877	
Weever, John B	Mt. Vernon	1877	
Welborn, G. W	Stewartsville	1877	
Williams, J. B	Wadesville	1877	
Young, T. B	Poseyville	1883	

This Society meets semi-annually, in April and October.

PUTNAM COUNTY.

Officers.

A. C. Farrow, Pres.
L. C. Cline, Vice Pres.
H. V. De Vore, Sec.
L. M. Hanna, Treas.

Censors.

S. Fisher,
E. B. Evans,
J. B. Stockwell.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Baker, P. S	Greencastle	1880	
Batman, Wm. F	Roachdale	1883	
Bence, G W	Greencastle	1879	
Cline, L. C	Bainbridge	1882	
Cross, J. B	Bainbridge	1877	Delinquent.
Cully, J. F	Bainbridge	1882	
De Vore, H. V	Greencastle	1883	
Evans, E. B.	Greencastle	1877	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Farris, E. G	Clinton Falls	1883	
Farrow, A. C	Greencastle	1877	
Fisher, Samuel	Greencastle	1877	
Fordice, J. L	Russellville	1879	
Hanna, Levi	Greencastle	1879	
Harris, W. C	Carpentersville.	1881	
Hawkins, Eugene	Bell Union	1882	
Larue, Benj.	Portland Mills	1884	
Leatherman, John	Manhattan	1885	
McCarty, W. T	Bainbridge	1885	
McNutt, G. F	Putnamville	1882	
Milligan, Thos. F	Roachdale.	1880	
Osborn, Jos. A	Greencastle	1884	Removed.
Preston, A. G	Greencastle	1877	
Preston, Abe	Greencastle	1885	
Preston, J. L	Cloverdale.	1877	
Scott, Chas. E	Greencastle	1882	
Smythe, G. C	Greencastle	1877	
Stockwell, Geo. W	Green county	1883	
Young, S. A.	Morton	1884	Removed.
Zane, T. M	Reelsville	1878	

RANDOLPH COUNTY.

Officers.

N. T. Chenoweth, Pres.
J. N. Trent, Vice Pres.
L. N. Davis, Sec.
J. E. Markle, Treas.

Censors.

W. G. Smith.
J. L. Contie.
J. Nixon.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Arthur, C. S	Portland, Jay Co.	1870	Honorary.
Bennett, J. E	Hill Grove, Ohio.	1877	Honorary.
Berry, J. S	Spartanburg	1878	
Beverly, J. E	Winchester	1876	
Blair, J. S	Lynn	1879	
Blount, C. N	Hagerstown	1885	Honorary.
Chenoweth, John T	Winchester	1876	
Chenoweth, N. T	Windsor	1876	
Contie, J. L.	Deerfield	1884	
Davis, R. P.	Portland, Jay Co.	1876	Honorary.
Davis, L. N.	Farmland	1876	
Evans, G. S.	Saratoga	1878	Withdrawn.

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Evans, J. J	Winchester	1876	
Farquhar, A. H	Ridgeville	1876	
Franks, H. P	Losantville	1883	
Good, A. H	Selma, Delaware Co	1876	Honorary.
Harrison, H	Union City	1876	
Heiner, John	Arba	1876	Delinquent.
Hollinger, J. N	Henry county	1880	Honorary.
Keener, James M	Farmland	1880	
Markle, J. E	Winchester	1876	
Meek, Jos	Arba	1885	
Nixon, John	Farmland	1882	
Rogers, A. G	Parker	1880	
Rynard, G	Union City	1885	
Smith, W. G	Winchester	1876	
Trent, J. N	Losantville	1883	

This Society meets second Wednesday of January, April, July and October.

RUSH COUNTY.

Officers.

S. W. McMahan, Pres.
R. F. Graham, Vice Pres.
J. C. Sexton, Sec.
C. H. Parsons, Ass't Sec.
F. G. Hackleman, Treas.

Censors.

J. H. Spurrier.
J. A. Axline.
S. C. Thomas.

Members.

NAMES.	RESIDENCE	ADMITTED.	REMARKS.
Arnold, John	Rushville	1876	
Arnold, W. W	Rush county	1876	
Axline, J. A	Raleigh	1876	
Graham, R. F	Rushville	1880	Withdrawn.
Green, J. W	Arlington	1876	
Green, Lot	Occident	1881	
Green, James C	Arlington	1883	
Hargrove, W. S	New Salem	1876	
Hackleman, F. G	Rushville	1882	
Inlow, J. J	Manilla	1876	
King, F. B	Homer	1885	
Moffett, John	Rushville	1876	
McMahan, S. W	Rushville	1879	
Parsons, C. H	Rushville	1878	
Rayburn, I. W	Ander'ville, Fr'klin co.	1880	
Smith, W. H	Rushville	1876	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Spurrier, J. H.	Rushville	1876	
Sexton, M	Rushville	1876	President in 1881.
Sexton, J. C.	Rushville	1882	
Thomas, S. C	Milroy	1878	

This Society meets on the first Monday of every month.

STEUBEN COUNTY.

Officers.

Lyman Abbott, Pres.
J. F. Wallace, Vice Pres.
H. D. Wood, Sec.
T. F. Wood, Treas.

Censors.

M. V. Ransbury.
S. H. Fuller.
J. J. Cameron.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Abbott, Lyman	Fremont	1875	
Beiry, T. E	Pleasant Lake	1880	Delinquent.
Bowin, M. M	Angola	1885	
Brown, D. N. E	Hamilton	1879	
Byall, H. M.	Metz	1883	
Cameron, J. Frank	Hamilton	1879	
Griffin, Daniel B	Angola	1870	
Fuller, Stephen H	Pleasant Lake	1877	
Morrison, T. Ray	Hudson	1882	
Ransbury, M. B.	Salem Center	1881	
Simmons, E. B	Fremont	1881	
Taylor, E. A	York Center	1882	
Wilkinson, J. J	Orland	1884	
Wood, I. F	Metz	1865	
Wood, H. D	Angola	1863	
Wood, Sol. A	Angola	1877	Delinquent.
Wallace, J. F	Orland	1881	

Meetings of the Society are held on each alternate Friday night.

TIPPECANOE COUNTY.

Officers.

W. R. Moffit, Pres.
J. F. Simison, Vice Pres.
H. W. Rainey, Sec.
S. T. Yount, Treas.

Censors.

George F. Beasley.
W. S. Walker.
John C. Webster.

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Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Baker, Moses	Stockwell	1881	
Baker, Joseph.	Stockwell	1884	
Beasley, George F	Lafayette	1877	
Crouse, J. H	Dayton	1884	
Ingersoll, J. M	Lafayette	1884	
Irwin, L. M.	Lafayette	1882	
Moffitt, W. R	Chauncey	1880	
O'Farrall, R. M	Lafayette	1884	
Rainey, H. W.	Lafayette	1883	
Seawright, S. R	Lafayette	1884	
Simison, J. F	Romney.	1884	
Walker, W. S.	Lafayette	1877	
Webster, J. C	Lafayette	1878	
Yount, S. T.	Lafayette	1877	

This Society meets the first Thursday in each month at St. Elizabeth Hospital

TIPTON COUNTY.

Officers.

D. P. Rubush, Pres.
M. V. B. Vickrey, Vice Pres.
A. S. Dickey, Sec.
A. B. Pitzer, Treas.

Censors.

W. Austin.
George M. Collins.
William N. Heath.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armfield, Tillman O.	Hobbs.	1881	Delinquent.
Austin, Winser	Windfall	1874	
Campbell, D. R	Normanda.	1878	Removed.
Collins, George M	Tipton	1874	Delinquent.
Dickey, A. S	Tipton	1884	
Doan, Nathan W	New Lancaster.	1874	
Glass, William M	Shielville	1874	Delinquent.
Grove, Jasper M	Tipton	1874	
Heath, William.	Sharpsville	1874	
Pitzer, Andrew B	Tipton	1874	
Rubush, David P	Sharpsville	1875	
Vickrey, A. M	Tipton	1874	
Vickrey, Martin Van Buren	Tipton	1874	
Welchel, Thomas C	Goldsmith	1878	
Ward, Louis B	Kempton	1883	Removed.
Wood, George C.	Sharpsville	1880	Delinquent.

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VANDERBURGH COUNTY.

Officers.

C. P. Bacon, Pres.
Louis D. Brose, Vice Pres.
Wm. D. Babcock, Sec. and Treas.

Censors.

E. Walker.
E. Linthicum.
C. P. Bacon.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bacon, C. P	Evansville	1878	
Babcock, Wm. D	Evansville	1882	
Brose, Louis D	Evansville	1883	
Carter, Lewis E	Evansville	1879	Delinquent.
Cater, G. F	Evansville	1883	Removed.
Compton, J. W	Evansville	1878	
Day, B. J	Evansville	1879	
Hayden, A. M.	Evansville	1883	
Knapp, Charles	Evansville	1883	
Lining, C. E	Evansville	1883	Removed.
Linthicum, E	Evansville	1878	
Murphy, Edward	Evansville	1883	
Owen, A. M.	Evansville	1879	
Rose, W. B	Evansville	1880	
Walker, George B	Evansville	1879	
Walker, Edwin	Evansville	1882	

VIGO COUNTY.

Officers.

J. P. Worrell, Pres.
J. R. Crapo, Vice Pres.
E. F. Stetson, Sec.
E. E. Glover, Treas.

Censors.

A. W. Spain.
W. P. Armstrong.
H. D. Mann.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Armstrong, Wm. P	Terre Haute	1878	
Carson, L. E	Prairieton	1878	
Crapo, J. R.	Terre Haute.	1878	
Crapo, G. W	Terre Haute.	1879	
Culbertson, R. H	Brazil.	1881	
Eichelberger, W. C	Terre Haute.	1880	
Givens, C. C	Lewis	1883	
Glover, E. E	Terre Haute.	1878	
Hood, T. C	Terre Haute.	1884	
Killgore, A. W	Asherton	1883	
Larkins, E. L.	Staunton	1882	
Mann, H. D	Terre Haute.	1874	Delinquent.

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
McJohnson, —	Pimento	1884	Suspended.
Mitchell, J. D.	Terre Haute.	1874	
Moorehead, T. W	Terre Haute.	1878	
Scovill, J. T	Terre Haute.	1880	
Shaley, F. W	Terre Haute.	1884	
Spain, A. W	Terre Haute.	1880	
Spencer, W. B	Terre Haute.	1880	
Stetson, E. F	Terre Haute.	1880	
Swafford, B. F	Terre Haute.	1874	
Tobey, O. C.	Terre Haute.	1882	
Warren, L. B	Terre Haute.	1884	
Weinstein, L. J	Terre Haute.	1879	
Willien, L. J	Terre Haute.	1874	
Worrell, J. P	Terre Haute.	1874	
Young, S. J.	Terre Haute.	1874	

This Society meets on the first Thursday in each month.

WABASH COUNTY.

Officers.

S. G. Thompson, Pres.
Joseph H. Ford, Sec.
E. F. Donaldson, Treas.

Censors.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Ader, Henry	Somerset.	1871	
Brady, T. R.	Lincolnville	1871	
Bloomer, F. H.	Pleasant View	1873	
Blount, R. F.	Wabash	1865	
Brown, W. J	Wabash	1883	
Brodbeck, G.	Wabash	1884	
Dicken, J. L	La Fontain	1854	
Dicken, C. L	La Fontain	1879	
Donaldson, E. F.	Wabash	1865	
Ford, James.	Wabash	1854	
Ford, James H	Wabash	1872	
Hale, M. M.	La Gro	1871	
Jessup, L. A.	Wabash	1884	
Jones, J. H.	Roann	1878	Removed.
Kautz, John	Dora	1873	
Kidd, G. P	Roann.	1874	
Lower, M. O.	North Manchester	1876	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Minnick, H. R.	Treaty.	1879	
Mooney, H. C.	Laketon.	1876	
Moore, P. G.	Rich Valley.	1871	
O'Neal, L.	Somerset.	1859	
O'Neal, O.	Somerset.	1879	Removed.
Renner, J. H	La Gro	1872	
Renner, M. E	La Gro	1883	
Smith, A. J.	Wabash	1871	
Shaffer, Philip.	North Manchester	1878	
Thomas, E. McD.	La Fontain.	1855	
Thompson, S. G	Wabash	1858	
Winton, Horace	North Manchester		

Time of meetings, the third Thursday of each month.

WARRICK COUNTY.

Officers.

S. L. Tyner, Pres.
T. J. Hargan, Sec. and Treas.

Censors.

D. A. Deforest,
W. B. Scales,
W. Wilson.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Daily, W. W	Booneville	1885	
Deforest, D. A	Booneville	1885	
Hargan, T. J	Booneville	1885	
Hurns, W. A	Chandler	1885	
Jones, T. B	Lynnville	1885	
Mills, W. H	Folsonville	1885	
Scales, W. B	Booneville	1885	
Tyner, T. L	Booneville	1885	
Wilson, W	Yankeetown	1885	

WARREN COUNTY.

Officers.

A. M. Porter, Pres.
Justin Ross, Sec. and Treas.

Censors.

O. Aborn.
S. C. Fenton.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Aborn, Orin.	Marshfield.	1881	
Fenton, Samuel C	Pine Village.	1875	
Osborn, S. N	Rainsville	1875	

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NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Osburn, C. W	West Lebanon	1884	Reinstated.
Porter, A. M	State Line	1875	
Ross, Justin	Williamsport	1875	
Reid, Samuel M	Independence	1883	
Stewart, J. C	Marshfield	1883	

O. D. Benson, reported last year, has removed to Iowa. A. V. Moore has left the county.

WASHINGTON COUNTY.

Officers.

C. Rathbun, Pres.
A. G. Weir, Vice Pres.
S. H. Harrod, Sec.
C. L Painter, Treas.

Censors.

T. M. Tucker.
John R. Bare.
A. N. Spurgeon.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Bare, John R	Salem	1884	
Baker, Thomas H. B	Pekin	1884	Delinquent.
Bowman, J. A.	Farabee's Station.	1884	Honorary.
Bradshaw, E. A	Halo	1884	
Brannock, B. B	Salem	1884	Removed.
Duff, S. W.	Salem	1884	
Harrod, S. H	Canton	1884	
Henderson, H. D.	Salem	1884	Delinquent.
Henderson, J. P.	Salem	1884	
Henderson, H. M	Salem	1885	Honorary.
Herron, Thos. W	Little York	1884	
Hobbs, H. C.,	Salem	1884	Delinquent.
Hoysett, J. W.	Saltilloville	1884	
Layman, James H.	Chestnut Hill	1884	
Murphy, C. W.	Salem	1884	Delinquent.
Oartley, J. H	New Philadelphia	1884	Delinquent.
Rathbun, Charles	Salem	1884	
Spurgeon, Ambrose N	South Boston.	1884	
Tucker, Thomas M.	Salem	1884	
Tucker, B. W.	Salem	1884	Deceased.
Weir, Alonzo G	Kossuth	1884	
Wilson, R. J	Salem	1884	Delinquent.

This Society meets on the first Monday in each month.

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WAYNE COUNTY.

Officers.
T. Courtney, Pres.
L. S. Kelsey, Vice Pres.
Nathan H. Ballard, Sec.
James F. Hibberd, Treas.

Censors.
Jacob R. Weist.
C. N. Blount.
J. Iutzi.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Allen John B	Hagerstown	1883	
Ballard, Nathan H	Richmond	1881	
Bond, Charles S	Richmond	1883	
Boyd, Samuel S	Dublin	1875	President in 1876.
Blount, Cyrus F	Hagerstown	1875	
Bunton, E. A	Washington	1883	Delinquent.
Courtney, J. T	Whitewater	1882	
Dwiggins, Moses F.	Richmond	1884	
Gaus, P. T	West Florence, O.	1875	Honorary.
Hadley, Edwin	Richmond	1875	
Hibberd, James F	Richmond	1877	President in 1862.
Huff, Oliver N	Fountain City	1879	
Iutzi, Joseph	Richmond	1878	
Johnson, Levi C.	Fountain City	1879	
Kelsey, Leverett S	Richmond	1880	
King, W. F	Centerville	1883	
Lewis, Emma B	Richmond	1884	
Mauk, John R	East Germantown	1875	
Mendenhall, William O	Richmond	1883	
Moore, C. H	Richmond	1884	
Morrow, Sarah Jane	Richmond	1884	
Pennington, Joel	Milton	1875	Pres. 1872, V. Pres. [1852-4.
Rutledge, John W.	Cambridge City	1875	
Sweeny, I. T	Milton	1879	
Schaffer, Edward	Richmond	1883	Delinquent.
Taylor, James E.	Richmond	1878	
Tillson, Hosea	Centerville	1876	
Thomas, Mary F	Richmond	1876	
Weist, Jacob R	Richmond	1876	President in 1879.

This Society meets on the second Thursday in May, July, September, November, January and March.

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WELLS COUNTY.

Officers.

A. G. Gorrell, Pres.
G. E. Fulton, Sec.
M. N. Newman, Treas.

Censors.

H. Gregg.
J. I. Metts.
C. H. English.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Crum, J. W	Barber's Mills	1883	
Cummins, B. F	Bluffton	1878	
Cummins, Pres R	Zainesville	1883	Delinquent.
English, C. H	Bluffton	1884	
Fulton, J. C	Murray	1878	
Fulton, G. E	Bluffton	1878	
Gregg, H	Bluffton	1883	
Gorrell, A. G	Bluffton	1880	
Melsheimer, C. T	Bluffton	1878	
Metts, J. I	Ossian	1878	
Metts, A. G	Ossian	1878	
Mason, L	Bluffton	1878	
Maddox, L. E	Keystone	1878	
Newman, M. N	Ossian	1878	
Spaulding, L. A	Bluffton	1878	

WHITE COUNTY.

Officers.

John Medaris, Pres.
R. M. Delzelle, Vice Pres.
William Spencer, Sec. and Treas.

Censors.

J. W. McAllister.
A. B. Jones.
R. M. Delzelle.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Aydelotte, W. R	Badger	1883	Deceased.
Ballou, A. B	Burnettsville	1870	
Clayton, George R.	Monon	1883	
Delzelle, R. M.	Reynolds	1872	
Didlake, M. T.	Monticello	1874	
Jones, A. B	Burnettsville	1878	
Medaris, John	Brookston	1864	
McAllister, J. W	Idaville	1882	
Smith, J. T	Brookston	1883	
Spencer, William	Monticello	1884	

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WHITLEY COUNTY.

Officers.

D. G. Linville, Pres.
N. I. Kithcart, Sec.
William Weber, Treas.

Censors.

M. Ireland,
D. M. Marshall,
D. Kirkpatrick.

Members.

NAMES.	RESIDENCE.	ADMITTED.	REMARKS.
Austin, Stephen S	Hecla	1883	Deceased.
Eberhard, Eli L	South Whitley	1883	
Egolf, H. M	Collamer	1883	Delinquent.
Grisier, F. G	Collins	1883	
Ireland, Martin	Columbia City	1883	
Kirkpatrick, Daniel	Larwill	1884	
Kitchcart, Nathan I	Columbia City	1883	
Koonts, S	Laud	1883	
Linville, D. G	Columbia City	1883	
LaFollette, T. J	South Whitley	1883	
Magers, Francis M	Churubusco	1883	
Marshall, D. M	Columbia City	1883	
Mitten, A. P	Columbia City	1883	
Richards, John	Laud	1883	
Scott, W. S	Hecla	1885	
Souder, C	Larwill	1883	
Weber, William	Columbia City	1883	
Webster, D. E	Larwill	1883	
Webster, Monroe W	South Whitley	1884	
Wenger, N. R	Coesse	1883	

County Societies from whom no reports have been received, are omitted from this list.

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ALPHABETICAL LIST OF MEMBERS.

Names of Former Members, Deceased, Delinquent, Removed or Expelled are omitted from this list. The Secretary will correct errors, upon notification, in the next issue.

Abbott, Lyman, Fremont.
Aborn, Orin, Marshfield.
Adams, J. M. C., Frankfort.
Adams, J. R., Petersburg.
Ader, Henry, Somerset.
Agee, C. J , Stendal.
Ager, U. A., Perrysburg.
Ahle, O. E., Brant
Alexander, John H., Clifty.
Alexander, S. J., New Albany.
Alexander, L. E., Pendleton.
Allen, J. B., Hagerstown.
Allen, Wesley, West Newton.
Allen, E., Fayetteville.
Anderson, W. B., Edwardsport.
Anderson, J. T., Honey Creek.
Anthony, J. R., Tampico.
Armitage, D. R., Muncie.
Armstrong, W. P., Terre Haute.
Armstrong, E. A., Kokomo.
Armstrong, W. R , Mexico.
Arnold, J. W., Columbus.
Arnold, Geo. W., Valparaiso.
Arnold, John, Rushville.
Arnold, W. W., Rush County.
Arthur, C. S., Portland.
Arwine, J. S., Columbus.
Auderey, Oscar, New Cumberland.
Austin, W., Winfield.
Austin, Charles B., Veedersburg.
Averdick, H. G., Oldenburg.
Axline, J. A., Raleigh.
Ayers, H. P., Fort Wayne.

Babcock, Wm. D., Evansville.
Bacon, C. P., Evansville.
Baily, G. D., Spiceland.
Baily, R. S., Spiceland.
Bain, Wm. C., Brownstown.
Baker, Moses, Stockwell.
Baker, Joseph, Stockwell.
Baker, P. S., Greencastle.
Ballard, D. J., St. Paul.
Ballard, N. H., Richmond.
Ballou, A. B., Burnettville.
Ball, J. F., Judson.
Banker, A. J., Columbus.
Bare, Addison W., Bryantsville.
Bare, John R , Salem.
Barker, J., Brownsburg.
Barkley, J., Farmers' Retreat.
Barnes, C. A., Brightwood.
Barnes, George O., Courtland.
Barnes, W. C., Mier.
Barnett, J. S , Butler.
Barrett, E. H., Greensboro.
Bartholomew, B., Danville.
Bash, Joseph M., Warsaw.
Bates, J. W., Broad Ripple.
Batman, William F., Roachdale.
Baysinger, T. W., Oatsville.
Beardsley, J. M., Winslow.
Beard, S. C., Vincennes.
Beard, F. W., Vincennes.
Beard, J. M. G., Ambia.
Beasley, George F., Lafayette.
Beatty, ———, Newmarket.

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Becknell, Irvin J., Milford.
Bedell, W. B., Vincennes.
Bell, Guido, Indianapolis.
Bell, William H., Logansport.
Bence, G. W., Greencastle.
Benedict, H., Springport.
Bennett, Joseph B., Butler.
Bennett, J. E., Hill Grove, Ohio.
Bennington, A. M., Lebanon.
Berry, A. F., Springvale.
Berry, J. S., Spartansburg.
Bersh, J. H., Kokomo.
Beverly, J. E., Winchester.
Beven, J. C., Vincennes.
Bigelow, J. K., Indianapolis.
Biggs, J. T., Mitchell.
Bitz, L. B., Blairsville.
Blair, J. S., Linn.
Blair, W. W., Princeton.
Bloomfield, E. M., Peru.
Bloomer, Frank H., Pleasant View.
Blount, C. F., Hagerstown.
Blount, R. F., Wabash.
Boaz, M. L., Brownstown.
Bobbitt, John H., Greensburg.
Bogan, E. W., Kirklin.
Bond, C. H., Richmond.
Bond, E. P., Lawrenceburg.
Bond, R. C., Aurora.
Boor, W. F., Newcastle.
Boor, W. A., Newcastle.
Booth, A. D., Noblesville.
Boswell, A. J., Andrews.
Borton, T. A., Plymouth.
Bounell, M. H., Lebanon.
Bounell, Thomas A., New Brunswick.
Bowers, C. C., Bristol.
Bowers, H. J., Moore's Hill.
Bowin, M. M., Angola.
Bowker, James J., La Otto.
Bowles, T. J., Muncie.
Bowman, Charles, New Albany.
Bowman, J. A., Farrabee's Station.
Boyd, James N., Annapolis.
Boyd, S. S., Dublin.
Boyden, W. J., Muncie.
Bracken, William, Greensburg.
Brady, C. C., Gilead.
Brady, T. R., Linconville.
Bradbury, A. B., Muncie.
Bradshaw, E. A., Halo.
Brandon, J. F., Anderson.
Brandon, W. S., Plum Tree.
Brayton, A. W., Indianapolis.
Brenton, W. H., Peru.
Brill, J. H., Pittsboro.
Brittain, S. H., Loogootee.
Broadbeck, G., Wabash.
Broadbent, Oliver, Anderson.
Brodbeck, W. H., Aurora.
Brooks, Wm. H., Fort Wayne.
Brose, Louis D., Evansville.
Broughton, F., Avilla.
Broughton, F. H., Wolcottville.
Brown, D. N. E., Hamilton.
Brown, G. W., Frankfort.
Brown, George W., Claypool.
Brown, J. B., Indianapolis.
Brown, W. J., Wabash.
Bryan, D. C, Indianapolis
Bryan, T. N., Indianapolis.
Bryan, G. W., Bloomington.
Bucher, J. C., Andrews.
Buchman, A. P., Fort Wayne.
Bucklin, G. W., New Harmony.
Buckingham, G. B., Brookville.
Bulkley, L. D., Mitchell.
Bullitt, T. W. Riverdale.
Burk, George L., Jamestown.
Burket, Calvin W., Warsaw.
Burket, Benjamin, Warsaw.
Burke, G. W., Newcastle.
Burney, W. A., New Albany.
Burton, A. R., Princeton.
Burton, George C., Mitchell.
Burton, John, Georgia.
Burton, G. W., Mitchell.
Burton, Isom, Mitchell.
Burton, W. A., Mitchell.
Busse, E. P., Vincennes.
Busjohn, F. A., Logansport.
Butler, C. H., Clifford.
Byall, H. M., Metz.
Byers, A. R., Petersburg.

Cady, N. W, Logansport.
Cain, J. C., Santa Fe.
Cameron, J. F., Hamilton.
Cammack, Thomas, Milford.
Cannon, G. H., New Albany.
Caplinger, C. A., Marshall.
Carnes, Z., Greenwood.
Carson, Joseph C., Hebron.
Carson, L. O., Trader's Point.
Carson, L. E., Prairieton.
Carson, W. F., Roanoke.
Carter, A., Plainfield.
Carter, D. M., Anderson.
Carr, George W., Ligonier.
Casebeer, H. M., Lagrange.
Casebeer, J. B., Auburn.
Chaflee, W. C., Huntington.
Chambers, John, Indianapolis.
Chamberlain, James N., Waterloo.
Charleton, N. E., Forest Hill.
Charleton, Samuel H., Seymour.
Chatard, Rt. Rev. S. A., Indianapolis.
Chenoweth, N. T., Windsor.
Chenoweth, John T., Winchester.
Chittenden, George F., Anderson.

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Chittick, Charles, Burlington.
Chittick, A. J., Hillisburg.
Chitwood, J., Connersville.
Chitwood, J. E., Connersville.
Chitwood, G. R., Connersville.
Chitwood, F. A., Connersville.
Clapp, W. A., New Albany.
Clark, C. S., Columbus.
Clark, A. J., Zionsville.
Clayton, George R., Monon.
Clevinger, B. J., Red Key.
Cline, L. C., Bainbridge.
Clouser, N. D., Hartford City.
Coble, Jacob, Spencer.
Cochrane, J., Spiceland.
Collins, S. H., Lawrenceburg.
Cole, Wm. C., Attica.
Colscott, T. A., Brookville.
Combs, G. W., Indianapolis.
Comingore, J. A., Indianapolis.
Compton, J. W, Evansville.
Conner, F. C., Red Key.
Conner, Thomas H., Metamora.
Conner, Levi, Jerome.
Contie, J. L., Deerfield.
Conwell, L. V., Van Buren.
Cope, James P., Vernon.
Cook, C. P., New Albany.
Cook, G. J., Indianapolis.
Cook, John W., Pendleton.
Cook, Ward, Pendleton.
Cooper, W. T., Circleville.
Corey, Lewis J., Van Buren.
Coryell, Samuel, Crothersville.
Cosby, G. O., Burnsville.
Costello, John F., Vevay.
Cotton, H. T. Zionsville.
Courtney, J. T., White Water.
Covalt, A. A., Greentown.
Covert, G. M., Sellersburg.
Covert, G. W., Whiteland.
Cox, T. B., Frankfort.
Cox, N. D., Spencer.
Crafton, W S., Lebanon.
Craig, A. G, Vevay.
Craig, T. E., Manchester.
Crapo, G. W., Terre Haute.
Crapo, J. R., Terre Haute.
Crawford, G. S., Clifty.
Crim, L. A., Bedford.
Crist, D. O., Indianapolis.
Cross, Joseph F., Rockville.
Crouse, H. M., Knightstown.
Crouse, J. H., Dayton.
Crum, J. W., Barber's Mills.
Culbertson. R. H, Brazil.
Culley, J. F., Bainbridge.
Cummings, D. J., Houston.
Cummings, H. A., Houston.
Cummins, B. F., Bluffton.
Cummins, S. M., Elkhart.
Cupp, M. L., Metamora.
Curtiss, Rev. George L., Jeffersonville.

Daily, W. W., Booneville.
Dancer, J., South Milford.
Daniels, David H, Otwell.
Daniels, E. A., Indianapolis.
Daniels, G. W., Marion.
Darby, A. B., Waterloo.
Dare, John S., Bloomingdale.
Darroch, W. P., Hollandsburg.
Davidson, A., Brownsburg.
Davidson, J. F., Wallace.
Davis, L. N., Farmland.
Davis, J. M., Greenville.
Davis, J. R., Morris.
Davis, Royse, Deckers.
Davis, R. P., Portland.
Davis, Samuel, Indianapolis.
Davisson, H. C., Hartford City.
Davisson, John H., Warsaw.
Day, B. F., Harrison.
Day, B. J., Evansville.
Dayton, G. H., Lima.
Deforest, D. A., Booneville.
Delzelle, R. M., Reynolds.
Demott, W. M., Haysville.
Detcheon, S. S., New Richmond.
Deverter, George D., Howard.
Devilbiss, A., Fort Wayne.
De Vore, H. V., Greencastle.
Dicken, C. L., La Fountain.
Dicken, J. L., La Fountain.
Dickes, P., Boundary.
Dickey, A. S., Tipton.
Didlake, M. T., Monticello.
Dills, Thomas J., Fort Wayne.
Dillman, L. D., Connersville.
Diven, C. E., Anderson.
Dixon, H. C., Tunnelton.
Doan, N. W., New Lancaster.
Dobyns, P. K., Whiteland.
Dodd, J., Clear Creek.
Donaldson, E. F., Wabash.
Donnell. T. C., Franklin.
Dorsey, G. L., Bicknell.
Dove, S. C., Westfield.
Dowden, A. W., New Point.
Downing, J. R., Reed's Station.
Drayer, P., Hartford City.
Dryden, T. J., Clayton.
Duff, G. W, Salem.
Duncan, J. B. O, Petersburg.
Dunlap, J. M., Indianapolis.
Dunlavy, J. E, Waveland.
Dunn, W. P., Frankfort.
Dunning, L. H., South Bend.
Duzan, George W., Zionsville.
Dwiggins, Moses F., Richmond.

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Earp, S. E., Indianapolis.
Easley, E. P., New Albany.
Eastman, Joseph, Indianapolis.
Eastes, W. T., Wheeling.
Eberhard, Eli L, South Whitley.
Eckelman, F. C., Elkhart.
Egbert, George, Marion.
Eichelberger, W. C., Terre Haute.
Eidson, J. W., Bourbon.
Elder, E. S., Indianapolis.
Elliott, Cyreneus, Poseyville.
Ellison, W. T., Heltonville.
Elson, R., Auburn.
Ely, J. M., Sugar Creek.
Ely, L. C., Sugar Creek.
English, C. H., Bluffton.
Ensminger, J. A., Crawfordsville.
Evans, E. B., Greencastle.
Evans, J. J., Winchester.
Eversole, Charles, Pleasant Plain.

Fairhurst, O., Vincennes.
Falk, F., Columbus.
Fall, W. D., Kirklin.
Fanning, F. W, Butler.
Fansler, D. N., Logansport.
Farabee, C. E., Danville.
Farquhar, A. H., Ridgeville.
Farrow, A. C., Greencastle.
Farris, E. G., Clinton Fall.
Farris, J. S., Bargersville.
Fawcett, J. H., Fayetteville.
Featherston, J. R., Indianapolis.
Fenton, S. C., Pine Village.
Ferguson, Frank C., Indianapolis.
Fermeier, P., Weisburgh.
Ferree, F. M., Indianapolis.
Ferris, E. S., New Castle.
Ferris, Samuel, New Castle.
Fertich, G. W., Dunkirk.
Field, E. W., Indianapolis.
Field, N., Jeffersonville.
Fields, M. H., Indianapolis.
Fine, Ephraim M., Steam Corners.
Fisher, Samuel, Greencastle.
Fisher, G. C., Patoka.
Fisher, W. N., Wanatah.
Fitch, A. P., Waynetown.
Flemming, W. L., Ft. Wayne.
Fletcher, C. I., Indianapolis.
Fletcher, W. B., Indianapolis.
Flynn, Wm., Marion.
Folks, C. R, Vincennes.
Ford, W. M., Mt. Auburn.
Ford, James, Wabash.
Ford, J. H., Wabash.
Ford, James H., Wabash.
Fordice, J. L., Russelville.
Fordick, Edwin L., Butler.
Fouts, W. D., Jeffersonville.
Franks, H. P., Losantsville.
Freeman, E. D., Osgood.
Freeman, J. W., Whitlock.
Freeman, Wm, Vevay.
French, Mattie, Indianapolis.
French, W. J., Franklin.
Friermood, E. K., Amboy.
Frierwood, S. M., Santa Fe.
Frink, C. S., Elkhart.
Fullenweider, C. J., Petersburg.
Fuller, S. H., Pleasant Lake.
Fulton, J. C., Murray.
Fulton, G. E., Bluffton.
Fussell, Lundy, Markleville.

Gaddy, Orville, Paris Crossing.
Gaddy, N. D., Lovett.
Galbraith, Thomas S., Seymour.
Gard, Oliver, Frankfort.
Gardner, Joseph, Bedford.
Garr, J. O., Kokomo.
Garretson, Wm. M., Perkinsville.
Garrigus, J. J., Sylvania.
Garver, J. J., Indianapolis.
Gastin, J. H, Stanford.
Gaston, J. M., Indianapolis.
Gatch, J. D., Lawrenceburg.
Gaus, P. T., West Florence, O.
Gemill, H. C., Markle.
Gentry, J. M., Frankfort.
Genung, W. R., Fort Branch.
Gibson, E. P., Hoosier Prairie, Ill.
Gibson, John, Georgia.
Gilbert, Joseph L., Kendallville.
Gillum, Wm. H., Rockville.
Givens, C. C., Lewis.
Glezen, A. E., Ireland.
Glover, E. E., Terre Haute.
Goldsberry, John A., Annapolis.
Good, A. H., Selma.
Goodin, Goldsmith, Veedersburg.
Goodrich, C. D., Lima.
Gordon, P. P., Hobart.
Gorrell, A. G., Bluffton.
Goss, J. M., Freedom.
Gould, S. W., Argos.
Graham, B. R., Peru.
Graham, T. A., Jeffersonville.
Graham, W. B., Noblesville.
Gray, J. A., Otterbein.
Gray, J. M., Noblesville.
Gray, O. F., Whitehall.
Grayston, B. H. B., Huntington.
Grayston, C. E., Huntington.
Grayston, F. S. C., Huntington.
Green, Charles H., North Vernon.
Green, James H., North Vernon.
Green, Elijah V., Martinsville.
Green, George R., Royerton.
Green, J. W., Boswell.

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Green, James C., Arlington.
Green, Lot, Occident.
Green, W. T., Albion.
Greenwalt, George L., Fort Wayne.
Gregg, James S., Fort Wayne.
Gregg, H. Y., Bluffton.
Gregg, V. H., Connersville.
Griffin, D. B., Angola.
Griffith, Mrs. M. E. H., Darlington.
Griffith, T. J., Darlington.
Griffith, Thomas J., Vevay.
Grigsby, W. B., Oaktown.
Grisier, F. G., Collins.
Gronendyke, O. J., New Castle.
Gronendyke, T. W., New Castle.
Grove, J. M., Tipton.
Gudgel, J. F., Hazelton.

Hackleman, F. G., Rushville.
Hadley, E., Indianapolis.
Hadley, E., Richmond.
Haines, H. B., Aurora.
Haines, Nathaniel P., Rosebury.
Hale, Marcus M., La Gro.
Hall, H. J., Franklin.
Hall, John W., Sweetser.
Hamilton, A. A., Marion.
Hamilton, S. N., Connersville.
Hammon, E. W., Montpelier.
Handmore, John, Jalapa
Hanna, L, Greencastle.
Harding, M. H., Lawrenceburg.
Hardy, J. J., Whitestown.
Hargan, T. J., Booneville.
Hargrove, W. S., New Salem.
Harrington, O. B., Elkhart.
Harris, F. M., Vincennes.
Harris, R. W., Algiers.
Harris, R. C., Ellettsville.
Harris, W. C., Carpentersville.
Harris, W. B., Vincennes.
Harrison, S. L., Vincennes.
Harrison, H., Union City.
Harrod, S. H., Canton.
Harrold, J. R., Roll P. O.
Harter, J. H., Anderson.
Harter, William P., Anderson.
Harvey, John W., Mansfield.
Harvey, Thomas B., Indianapolis.
Haslep, Marie, Indianapolis.
Haughter, A. J., Oaktown.
Haughton, R. E., Indianapolis.
Hawley, K. D., Elizabethtown.
Hawkins, E., Belle Union.
Hayden, A. M., Evansville.
Hays, George C., Hillsboro.
Hays, John W., Albion.
Hays, W. F., Indianapolis.
Haymaker, G. W., Charleston.
Haymond, W. S., Indianapolis.
Hazel, John B., Claypool.
Heaton, C., Moore's Hill.
Heath, William, Sharpsville.
Heatwole, J. H., Goshen.
Heavenridge, A., Stilesville.
Helm, J. H., Penn.
Henderson, J. P., Salem.
Hendricks, Walter C., Wilbur.
Hendricks, W. C., Greenwood.
Hendricks, W. E., Martinsville.
Henley, Alphæus, Fairmount.
Henry, W. C., Aurora.
Hensler, Ernst, W. Franklin.
Hensley, J. H., Vincennes.
Henson, Theo., Martinsville.
Henthorne, L. S. Indianapolis.
Hermon, John, Logansport.
Herr, H. S., Westfield.
Herron, Thomas W., Little York.
Hervey, J. W., Indianapolis.
Hervey, F. F., Maxwell.
Hese, Luther P., Marion.
Hess, M. M., Cleveland.
Hess, F. C., Cadiz.
Hibberd, J. F., Richmond.
Hickam, W., Freedom.
Hicks, C., Caborns.
Higgins, C. B., Peru.
Hoadley, W. J., Danville.
Hobbs, W., Knightstown.
Hodges, E. F., Indianapolis.
Hogsett, J. W., Saltilloville.
Holmes, J. H., Manson.
Hollinger, J. N., Henry county.
Hollis, Samuel, Upland.
Holloway, O. E., Knightstown.
Holton, W. M., New Harmony.
Holtzendorff, A. C., Plymouth.
Home, Samuel S., Jonesboro.
Hon, B. J., Orleans.
Hood, T. C., Terre Haute.
House, G. F. H., Pecksburg.
Howard, N. P., Sr., Greenfield.
Howard, N. P., Jr., Greenfield.
Howard, S. B., Tunnelton.
Hubbard, W. H., Fairmount.
Hudson, B. F., Montezuma.
Huens, W. A., Chandler.
Huff, O. N., Fountain City.
Hughes, W., Lima.
Hull, W. H., Center.
Hunt, J. Walter, Alexandria.
Hunt, William A., Anderson.
Hunt, P. G. C., Indianapolis.
Hunter, F. S., Fort Ritner.
Hunter, W. B., Logansport.
Hupp, Samuel, Warren.
Hurty, J. N., Indianapolis.
Hurt, W. J., Waynetown.
Hutchings, B. F., Crawfordsville.

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Iddings, H. L., Merrillville.
Ijams, T. F., North Grove.
Ingersoll, J. M., Lafayette.
Inlow, J. J., Manilla.
Ireland, Martin, Columbia City.
Irwin, L. M., Lafayette.
Iutzi, J., Richmond.

Jackson, F. G., Mount Summitt.
Jackson, L. M., Jonesboro.
James, D H., Aurora.
Jameson, H., Indianapolis.
Jameson, P. H., Indianapolis.
Jeffries, W. E., Indianapolis.
Jessup, L. A., Wabash.
Jennings, J. W., Millersburg.
Johnson, Charles S., Harveysburg.
Johnson, T. C., Kokomo.
Johnson, L. C., Fountain City.
Jones, A. B., Burnettsville.
Jones, S., Covington.
Jones, Horace E., Anderson.
Jones, J. T., Franklin.
Jones, J. M, Cataract.
Jones, O. H., Mace.
Jones, R. E., Lebanon.
Jones, T. B., Lynnville.
Judah, Winepark, Guthrie.
Judkins, E. E. I., Greenfield.
Jump, Samuel V., New Burlington.

Kane, J. M., Northfield.
Kautz, John, Dora.
Keegan, E. W., Crawfordsville.
Keegan, John, Indianapolis.
Kemper, G. W. H., Muncie.
Keener, James M., Farmland.
Keith, B. F., Edwardsport.
Kelly, F. H., Stewardsville.
Kelly, John C., Mitchell.
Kelly, William, Monterey.
Kempff, E. J., Ferdinand.
Kempff, P. H., Ferdinand.
Kennedy, L. H., Danville.
Kendle, G. C., Princeton.
Kern, Lewis, Kokomo.
Kelsey, L. S., Richmond.
Kidd, G. P., Roann.
Kidd, W. G., Princeton.
Kidder, J. F., New Mount Pleasant.
Kilander, W. J., Markle.
Kilgore, A. W., Atherton.
Kimberlin, H. L, Mitchell.
Kime, R. R., Union.
King, F. B., Homer.
King, H. O., Pierceton.
King, W. F., Centerville.
King W. R., Philadelphia.
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Smith, S. W., Leesville.
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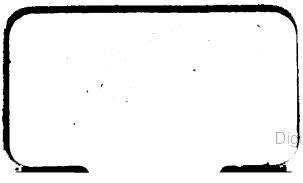

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